

VPDES PERMIT PROGRAM FACT SHEET

This document gives pertinent information concerning the VPDES Permit listed below. This permit is being processed as a **MAJOR, INDUSTRIAL** permit. The effluent limitations contained in this permit will maintain the water quality standards of 9 VAC 25-260-00 et seq.

1. **PERMIT NO.:** VA0090891

EXISTING PERMIT

EXPIRATION DATE: November 12, 2008

2. **FACILITY NAME AND LOCAL MAILING ADDRESS**

Bear Garden Generating Station
5000 Dominion Boulevard
Glen Allen, Virginia 23060

FACILITY PHYSICAL LOCATION (IF DIFFERENT)

2608 C.G. Woodson Road
Hwy 670, one mile SE of New Canton
New Canton, Virginia 23123
Buckingham County

FACILITY CONTACT:

NAME: Kimberly Q. Lanterman

TITLE: Project Manager

PHONE: (804) 273-3051

E-MAIL: Kimberly.Q.Lanterman@dom.com

ALTERNATE CONTACT:

NAME: Kenneth W. Roller

TITLE: Environmental Consultant

PHONE: (804) 273-3494

E-MAIL: Kenneth.Roller@dom.com

3. **OWNER CONTACT: (TO RECEIVE PERMIT)**

NAME: Pamela F. Faggert

TITLE: Vice President and Chief Environmental Officer

COMPANY NAME: Dominion Resources Services, Inc.

ADDRESS: 5000 Dominion Boulevard
Glen Allen, Virginia 23060

PHONE: (804) 273-3467

ALTERNATE CONTACT:

NAME: Laurence Labrie

TITLE: Environmental Consultant

PHONE: (804) 273-3075

E-MAIL: Laurence.A.Labrie@dom.com

4. **PERMIT DRAFTED BY:** DEQ, Water Permits, South Central Regional Office

Permit Writer: Kirk A. Batsel

Dates: August 11, 2008, September 15, 2008, Oct 17, 2008,
January 29, 2009, March 30, 2009, April 21, 2009, July 30, 2009
August 14, 2009, August 17, 2009, August 21-31, 2009,
October 1, 2009

Reviewed By: R. P. Goode
Kip Foster

Date(s): August 18, 2008, October 14, 2008
Date(s): August 6, 2009

5. **PERMIT CHARACTERIZATION:** (Check as many as appropriate)

☐ Issuance

☒ Reissuance

☐ Revoke & Reissue

☐ Owner Modification

☐ Board Modification

☐ Change of Ownership/Name

☐ Municipal

SIC Code(s) _____

☒ Industrial

SIC Code: 4911

Electric Services

☐ POTW

☐ PVOTW

☒ Private

☐ Federal

☐ State

☐ Publicly-Owned Industrial

☐ Site-Specific WQ Criteria

☐ Variance to WQ Standards

☐ Water Effects Ratio

☐ Interim Limits in Other Document (attach to fact sheet)

☐ Concept Engineering Report Being Approved with Permit

☐ Possible Interstate Effect

6. **APPLICATION COMPLETE DATE:** April 14, 2009

7. **RECEIVING WATERS CLASSIFICATION:** River basin information.

Outfall No:	001		
Receiving Stream:	James River	7-Day/10-Year Low Flow:	240.11 MGD
River Mile:	176	7-Day/10-Year High Flow:	791.39 MGD
Basin:	James River (Middle)	1-Day/10-Year Low Flow:	183.63 MGD
Subbasin:	James River	1-Day/10-Year High Flow:	618.89 MGD
Section:	10	30-Day/5-Year Low Flow:	404.42 MGD
Class:	III	30-Day/10-Year Low Flow:	336.11 MGD
Special Standard(s):	NEW-3	Harmonic Mean Flow:	1392.78 MGD

Outfall No:	002		
Receiving Stream:	UT, Webb Branch/James River	7-Day/10-Year Low Flow:	0.0 MGD
River Mile:	0.64	7-Day/10-Year High Flow:	0.0 MGD
Basin:	James River (Middle)	1-Day/10-Year Low Flow:	0.0 MGD
Subbasin:	James River	1-Day/10-Year High Flow:	0.0 MGD
Section:	10	30-Day/5-Year Low Flow:	0.0 MGD
Class:	III	30-Day/10-Year Low Flow:	0.0 MGD
Special Standard(s):	NEW-3	Harmonic Mean Flow:	0.0 MGD

8. **FACILITY DESCRIPTION:** Describe the type facility from which the discharges originate.

Proposed industrial and storm water discharge resulting from the operation of a natural gas and oil fired power plant.

9. **LICENSED WASTEWATER OPERATOR REQUIREMENTS:** (X) No () Yes Class:

10. **RELIABILITY CLASS:** Industrial Facility – NA

11. **SITE INSPECTION DATE:** 4/14/08 **REPORT DATE:** 7/9/08 preconstruction inspection

Performed By: Kirk Batsel, VPDES & Mark Bushing, VWP

SEE ATTACHMENT 1

12. **DISCHARGE(S) LOCATION DESCRIPTION:** Provide USGS Topo which indicates the discharge location, significant (large) discharger(s) to the receiving stream, water intakes, and other items of interest.

Name of Topo: Arvonja

Quadrant No.: 130A

SEE ATTACHMENT 2

13. **ATTACH A SCHEMATIC OF THE WASTEWATER TREATMENT SYSTEM(S) [IND. & MUN.]. FOR INDUSTRIAL FACILITIES, ALSO PROVIDE A GENERAL DESCRIPTION OF THE PRODUCTION CYCLE(S) AND ACTIVITIES. FOR MUNICIPAL FACILITIES, PROVIDE A GENERAL DESCRIPTION OF THE TREATMENT PROVIDED.**

Narrative: Outfall 001 effluent consists of low volume wastes (max. 0.072 MGD internal outfall 101, application), cooling tower blowdown, RO reject, deionization regeneration, cooling coil condensation, and thermal cooling blowdown (max. 0.413 MGD internal outfall 102, 1/14/09 application). The combined outfall 001 effluent is proposed to be discharged to the James River via the existing bank outfall structure at a maximum rate of 0.485 MGD. Outfall 002 is proposed to discharge stormwater from a proposed settling basin to an unnamed tributary of the James River.

SEE ATTACHMENT 3

14. **DISCHARGE DESCRIPTION:** Describe each discharge originating from this facility.

SEE ATTACHMENT 4

15. **COMBINED TOTAL FLOW:**

TOTAL: 0.485 MGD (for public notice)

PROCESS FLOW: 0.485 MGD (IND.) (anticipated max flow, application)

NONPROCESS FLOW: Outfall 002 Totally rainfall dependent (IND.)

DESIGN FLOW: *Not Applicable* (MUN.)

16. **STATUTORY OR REGULATORY BASIS FOR EFFLUENT LIMITATIONS AND SPECIAL CONDITIONS:** (Check all which are appropriate)

☒ State Water Control Law
☒ Clean Water Act
☒ VPDES Permit Regulation (9 VAC 25-31-10 et seq.)
☒ EPA NPDES Regulation (Federal Register)
☒ EPA Effluent Guidelines [40 CFR 400 – 471 (industrial)]
☒ EPA Effluent Guidelines [40 CFR 133 (municipal 2^o treatment)]
☒ Water Quality Standards (9 VAC 25-260-00 et seq.)
☐ Waste load Allocation from a TMDL or River Basin Plan

17. **LIMITATIONS/MONITORING:** Include all effluent limitations and monitoring requirements being placed in the permit for each outfall, including any WET limits. If applicable, include any limitations and monitoring requirements being included for sludge and ground water.

There are no applicable limitations and monitoring requirements for sludge.

There are no applicable limitations and monitoring requirements for ground water.

SEE ATTACHMENT 5

18. **SPECIAL CONDITIONS:** Provide all actual permit special conditions, including compliance schedules, toxic monitoring, sludge, ground water, storm water and pretreatment.

SEE ATTACHMENT 6

19. **EFFLUENT/SLUDGE/GROUND WATER LIMITATIONS/MONITORING RATIONALE:** For outfalls, attach any analyses completed (MIX.EXE and WLA.EXE) and STATS printouts for individual toxic parameters. As a minimum, it will include: waste load allocation (acute, chronic and human health); statistics summary (number of data values, quantification level, expected value, variance, covariance, 97th percentile, and statistical method); input data listing; and, effluent limitations determination. Include all calculations used for each outfall's set of effluent limits and incorporate the results of any water quality model(s). Include all calculations/documentation of any antidegradation or anti-backsliding issues in the development of any limitations; complete the review statements below. Provide a rationale for limited internal waste streams and indicator pollutants. Attach any additional information used to develop the limitations, including any applicable water quality standards calculations (acute, chronic and human health).

OTHER CONSIDERATIONS IN LIMITATIONS DEVELOPMENT:

WAIVERS/VARIANCES/ALTERNATE LIMITATIONS: Provide justification or refutation rationale for requested waivers to the permit application (e.g., testing requirements) or variances/alternatives to required permit conditions/limitations. This includes, but is not limited to: variances from technology guidelines or water quality standards; WER/translator study consideration; variances from standard permit limits/conditions.

N/A

SUITABLE DATA: What, if any, effluent data were considered in the establishment of effluent limitations and provide all appropriate information/calculations.

All suitable effluent data were reviewed. (Note: available data are estimates based on proposed operation)

ANTIDEGRADATION REVIEW: Provide all appropriate information/calculations for the antidegradation review.

Tier I: _____ Tier II: X Tier III: _____

The State Water Control Board's Water Quality Standards regulations include an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier I, existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier II water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier II waters is not allowed without an evaluation of the economic and social impacts. Tier III water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters. The limitations in this permit were developed in accordance with section 303(d)(4) of the Clean Water Act. Therefore, antidegradation restrictions do not apply.

The antidegradation review begins with the Tier determination. The facility discharges directly to the James River. This receiving stream is listed as Category 5A on the 303(d) list for PCB contamination in fish tissue. The Virginia Department of Health has issued a "health advisory" for fish consumption in this segment due to PCB contamination. This permit contains a prohibition on discharge of PCBs. PCB contamination in fish tissue is not used as a sole basis for classifying a receiving stream as Tier I. Therefore, the James River, at the point of this facility's discharge, is designated as Tier II and no significant degradation of the existing water quality will be allowed. Permit limits have been established by determining waste load allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These waste load allocations will provide for the protection and maintenance of all existing uses.

Antidegradation baselines would be evaluated for all parameters for which data exist, but because there is no proposed expansion for this existing discharge (no increase in pollutant loading), the baselines are not established. If this permit action had included an expansion of the design capacity for this facility, then baselines would have been calculated as not more than 25% of the unused assimilative capacity for the protection of aquatic life (acute and chronic) and not more than 10% for the protection of human health. The unused assimilative capacity is defined as the difference between existing water quality and the criterion for a specific pollutant.

ANTIBACKSLIDING REVIEW: Indicate if antibacksliding applies to this permit and, if so, provide all appropriate information.

The subject facility has yet to be constructed. Additionally, the new owner, Dominion Power, reconfigured the design of the proposed facility changing the proposed discharge flow. Based on this new information, TRC limitations were reassessed with this reissuance and limits have been included which are protective of Virginia Water Quality Standards. Therefore, backsliding applies to this permit but conforms to the anti-backsliding provisions of section 402 (o) of the Clean Water Act, 9 VAC 25-31-220 L. of the VPDES Permit Regulation and 40 CFR 122.44 (l).

SEE ATTACHMENT 7

20. **SPECIAL CONDITIONS RATIONALE:** Provide a rationale for each of the permit's special conditions, including compliance schedules, toxic monitoring, sludge, ground water, storm water and pretreatment.

SEE ATTACHMENT 8

21. **SLUDGE DISPOSAL PLAN:** Provide a brief description of the sludge disposal plan (e.g., type sludge, treatment provided and disposal method). Indicate if any of the plan elements are included within the permit.

Water treatment residuals will be hauled offsite for disposal at an appropriately licensed landfill.

22. **MATERIAL STORED:** List the type and quantity of wastes, fluids, or pollutants being stored at this facility. Briefly describe the storage facilities and list, if any, measures taken to prevent the stored material from reaching State waters.

SEE ATTACHMENT 9

23. **RECEIVING WATERS INFORMATION:** Refer to the State Water Control Board's Water Quality Standards [e.g., River Basin Section Tables (9 VAC 25-260 - Part IX) [along with Parts VII and VIII]. Use 9 VAC 25-260-140 C (introduction and numbered paragraph) to address tidal waters where fresh water standards would be applied or transitional waters where the most stringent of fresh or salt water standards would be applied. Attach any memoranda or other information which helped to develop permit conditions (i.e. flow determination memo, tier determinations, PReP complaints, special water quality studies, STORET data and other biological and/or chemical data, etc.

SEE ATTACHMENT 10

24. **303(d) LISTED SEGMENTS:** Indicate if the facility discharges directly to a segment that is listed on the current 303(d) list, if the allocations are specified by an approved TMDL and, if so, provide all appropriate information/calculations. If the facility discharges directly to a stream segment that is on the current 303(d) list, the fact sheet must include a description of how the TMDL requirements are being met.

This facility discharges directly to the James River. This stream segment, to receive the proposed effluent is listed as Category 5A on the current approved 303(d) list for PCB contamination in fish tissue. The TMDL which will be prepared for this segment will not have a waste load allocation for this discharge for PCBs. No limit for PCBs is included in this permit because the effluent is not anticipated to contain that pollutant. In fact, this permit contains a prohibition against the discharge of PCBs from this source. The permit contains a TMDL reopener clause which will allow it to be modified, in compliance with section 303(d)(4) of the Act once a TMDL is approved.

SEE ATTACHMENT 11

25. **CHANGES TO PERMIT:** Use TABLE A to record any changes from the previous permit and the rationale for those changes. Use TABLE B to record any changes made to the permit during the permit processing period and the rationale for those changes [i.e., use for comments from the applicant, VDH, EPA, other agencies and/or the public where comments resulted in changes to the permit limitations or any other changes associated with the special conditions or reporting requirements].

SEE ATTACHMENT 12

26. **NPDES INDUSTRIAL PERMIT RATING WORKSHEET:**

TOTAL SCORE: 600 **SEE ATTACHMENT 13**

27. **EPA/VIRGINIA DRAFT PERMIT SUBMISSION CHECKLIST:**

SEE ATTACHMENT 14

28. **DEQ PLANNING COMMENTS RECEIVED ON DRAFT PERMIT:** Document any comments received from DEQ planning.

This proposed discharge is not addressed in any planning document.

THE FOLLOWING SECTION [PUBLIC PARTICIPATION (No. 29)] WILL BE COMPLETED AFTER PUBLIC NOTICE.

29. **PUBLIC PARTICIPATION:** Document comments/responses received during the public participation process. If comments/responses provided, especially if they result in changes to the permit, place in the attachment.

VDH COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the Virginia Dept. of Health and noted how resolved.

Based on their review of the application, the VDH had no objections to the draft permit, however, as stated by letter dated June 16, 2008 and received June 20, 2008, VDH did comment that the proposed Cob Creek Reservoir Public Water Supply (PWS) intake point is approximately 6.5-7 miles downstream. VDH recommended that stream standards be maintained for PWS for the area of the proposed Cobbs Creek reservoir raw water intake. This is a new development since the initial VPDES permit issuance.

EPA COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from the U.S. Environmental Protection Agency and noted how resolved.

EPA waived the right to comment and/or object to the adequacy of the draft permit. [USE FOR ALL MINORS]

OR

EPA has no objections to the adequacy of the draft permit.

OR

By letter dated _____, the EPA provided the following comments: (DESCRIBE COMMENTS AND RESOLUTIONS)

ADJACENT STATE COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from an adjacent state and noted how resolved.

Not Applicable.

OTHER AGENCY COMMENTS RECEIVED ON DRAFT PERMIT: Document any comments received from any other agencies (e.g., VIMS, VMRC, DGIF, etc.) and noted how resolved.

By email dated September 3, 2008, the Department of Game and Inland Fisheries (DGIF) provided the following comments:

"we recommend a mussel survey be performed from 50 meters up- through 950 meters downstream of the proposed discharge location in the James River, in accordance with the DRAFT guidelines developed by DGIF and USFWS (attached). All relocations should be coordinated with Brian Watson, VDGIF Region II Wildlife Diversity Biologist (telephone (434) 525-7522), and no federally listed species should be relocated without first coordinating with the USFWS (telephone (804) 693-6694). We recommend that all instream work within the James River and its tributaries follow a time of year restriction protective of mussels from April 15 through July 31, and from August 15 through September 30 of any given year. We also recommend contacting the USFWS regarding federally listed species.

The James River is a designated Potential Anadromous Fish Use Area. We recommend that all instream work in the James River and its tributaries adhere to a time of year restriction from March 15 through June 30 of any given year.

If the facility is constructed, we recommend DEQ require the applicant to monitor temperature and flow by installing a continuous recorder both up- and downstream from the discharge/s, in order to protect the overall health of the aquatic resources, correlate these parameters and better represent actual river conditions, and ensure compliance with the permit conditions."

On September 5, 2008 K. Batsel (DEQ) called and spoke with E. Ashenbach (DGIF) to obtain clarity on comments submitted from DGIF to DEQ. Two important clarifications were made during this call. The first related to the "standard" recommendation by DGIF to contact USFWS regarding federally listed species. Mr. Ashenbach explained that this recommendation is to mean that the applicant is recommended to contact USFWS. The second clarification pertains to time of year restrictions. Mr. Ashenbach explained that time of year restrictions apply to perennial portions of tributaries and the James River.

A Threatened & Endangered (T&E) coordination meeting was held on July 7, 2008 at the DGIF HQ office in Richmond, Va. Applicable representatives of DGIF, DEQ (E. Daub & K. Batsel), Dominion, and Dominion's consultants were present. Dominion agreed at this meeting to voluntarily initiate the recommended mussel survey in accordance with DGIF recommended methodology. DGIF representatives agreed at the joint July 7, 2008 meeting, to coordinate with the US Fish & Wildlife Service (USFWS). As of 9/3/08, surveys had been completed for all applicable tributaries and mussel survey work was progressing within the James River proper within the designated reach. It is understood by DEQ, that the required mussel surveys and methodology approved by DGIF and currently underway addresses USFWS interests.

The proposed power station requires the issuance of both a VPDES permit and a Virginia Water Protection Permit Program (VWPPP) permit. As the VWPPP permit pertains to construction related work within state waters (wetlands and perennial portions of tributaries), appropriate time-of-year restrictions for both mussels and anadromous fish, will be considered for inclusion in the VWPP permit. As applicable time of year restrictions will be placed in the VWPP permit, these restrictions are not necessary for inclusion in this VPDES permit.

Regarding the DGIF comment concerning protection of the health of aquatic resources, DEQ has included in this VPDES permit a continuous recorded effluent flow requirement, continuous temperature monitoring, a semi-annual instream mixing zone temperature monitoring special condition, a spatially limited thermal mixing zone among other water quality based requirements, and a requirement to develop a predictive instream temperature model to insure continual instream temperature compliance at the edge of the approved mixing zone during the current permit term. Additional safe guards include monitoring outfall 001 effluent for Virginia Water Quality Standards and a Toxics Management Program special condition. Limitations, monitoring, and analysis utilize critical stream flow conditions and conservative effluent discharge variables, in order to insure protection of all aquatic life, including T&E species. The continuous effluent temperature monitoring requirement and requirement for development of a predictive temperature model is new to this permit and is in response to DGIF and Dominion comments. River flow can be approximated by existing stream flow gauges and temperature concerns are addressed by the new continuous effluent temperature monitoring requirement and the temperature related permit special conditions in Part I.B. 12&13. Based on the permit as drafted, and in particular the monitoring and special conditions as noted, DEQ considers the permit protective of aquatic resources and does not consider continuous instream (receiving stream) temperature and flow monitoring, upstream and downstream of the discharge, necessary at this time.

OTHER COMMENTS RECEIVED FROM RIPARIAN OWNERS/CITIZENS ON DRAFT PERMIT:

Document any comments received from other sources and note how resolved.

[SELECT THE APPROPRIATE ONE BELOW AND DELETE THE REST]

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation, and no comments were received.

OR

The application and draft permit have received public notice in accordance with the VPDES Permit Regulation. Section 9 VAC 25-31-310 of the VPDES Permit Regulation states, in part, "The Board shall hold a public hearing whenever it finds, on the basis of requests, a significant degree of public interest in a draft permit(s)."

NOTE: DESCRIBE PN COMMENTS AND RESOLUTIONS. PROVIDE PUBLIC HEARING DATE AND REFERENCE BACKGROUND MEMORANDUM, IF APPROPRIATE.

PUBLIC NOTICE INFORMATION: Comment Period: **Start Date:**
End Date:

NOTE: THE 30-DAY COMMENT PERIOD STARTS THE DAY AFTER THE FIRST PUBLIC NOTICE APPEARS IN THE NEWSPAPER AND ENDS 30 DAYS LATER, UNLESS IT FALLS ON A WEEKEND OR HOLIDAY, IN WHICH CASE YOU GO TO THE NEXT BUSINESS DAY.

Persons may comment in writing or by e-mail to the DEQ on the proposed reissuance of the permit within 30 days from the date of the first notice. Address all comments to the contact person listed below. Written or e-mail comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The Director of the DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requestor's interests would be directly and adversely affected by the proposed permit action.

All pertinent information is on file and may be inspected, and arrangements made for copying by contacting Kirk A. Batsel at: Department of Environmental Quality (DEQ), South Central Regional Office, 7705 Timberlake Road, Lynchburg, VA 24502. Telephone: 434-582-6204 E-mail: kabatsel@deq.virginia.gov

Following the comment period, the Board will make a determination regarding the proposed reissuance. This determination will become effective, unless the Director grants a public hearing. Due notice of any public hearing will be given.

30. ADDITIONAL FACT SHEET COMMENTS/PERTINENT INFORMATION:

The permittee is current with their annual permit maintenance fees.

The James River Basin, section 10, class III, has a special standard designation of NEW-3 (nutrient enriched waters). However, this specific designation only includes the South Fork Rivanna Reservoir and all tributaries of the impoundment upstream to their headwaters. The discharge from the Dominion Bear garden generating station is not included in this segment of the Rivanna River and, therefore, this nutrient enriched water designation is not applicable.

The permittee has submitted several proposed changes in plant design which have delayed the development of this Fact Sheet and draft permit.

31. SUMMARY OF SPECIFIC ATTACHMENTS LABELED AS:

- | | |
|----------------------|---|
| Attachment <u>1</u> | Site Inspection Report/Memorandum |
| Attachment <u>2</u> | Discharge Location/Topographic Map |
| Attachment <u>3</u> | Schematic/Plans & Specs/Site Map/Water Balance |
| Attachment <u>4</u> | Discharge/Outfall Description |
| Attachment <u>5</u> | Limitations/Monitoring |
| Attachment <u>6</u> | Special Conditions |
| Attachment <u>7</u> | Effluent/Sludge/Ground Water Limitations/Monitoring Rationale/Suitable Data/
Stream Modeling/Antidegradation/Antibacksliding |
| Attachment <u>8</u> | Special Conditions Rationale |
| Attachment <u>9</u> | Material Stored |
| Attachment <u>10</u> | Receiving Waters Info./Tier Determination/STORET Data |
| Attachment <u>11</u> | 303(d) Listed Segments |
| Attachment <u>12</u> | TABLE A and TABLE B - Change Sheets |
| Attachment <u>13</u> | NPDES Industrial Permit Rating Worksheet |
| Attachment <u>14</u> | EPA/Virginia Draft Permit Submission Checklist |
| Attachment <u>15</u> | Chronology Sheet |

ATTACHMENT 1

SITE INSPECTION REPORT/MEMORANDUM

MEMORANDUM

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY SOUTH CENTRAL REGIONAL OFFICE WATER DIVISION

7705 Timberlake Road

Lynchburg, VA 24502

SUBJECT: Dominion Bear Garden Generation Station, VPDES PERMIT # VA0090891, (Preconstruction) Permit Reissuance Site Inspection, April 14, 2008

TO: Bob Goode, Water Permits Manager - SCRO

FROM: Kirk Batsel, Sr. Environmental Engineer - SCRO *KB*

DATE: July 9, 2008

COPIES: Permit file

A site visit was conducted at the subject proposed facility on April 14, 2008. This inspection was conducted as part of the VPDES permit reissuance. However, the station has not been constructed at this point. Since the last reissuance, the permit has been transferred to Dominion Power. Dominion has decided to slightly modify the plant's proposed construction design. This new design will eliminate the proposed outfall 003. The site visit was conducted to become familiar with the site, and was also coordinated with the Army Corps of Engineers, as part of the wetland and stream permitting process. M. Bushing and I arrived at the New Canton at approximately 9am. We meet w/ Dominion, their consultants, and ACOE representatives. We proceeded to the site and conducted the inspection of the proposed site. Please find pictures taken during this event below.

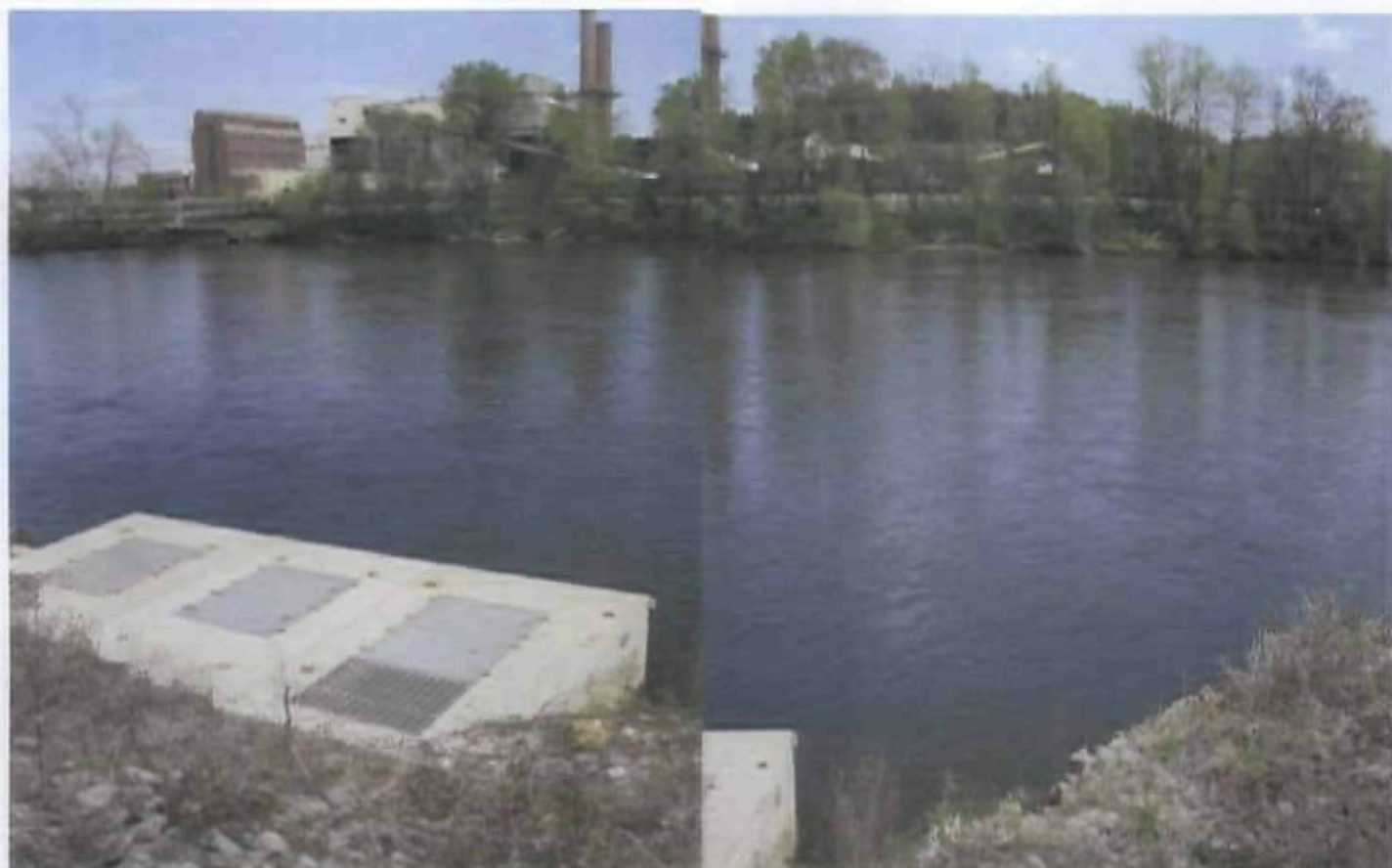


Above: Proposed Outfall 002 receiving stream.



Above: Large tree to be preserved.

The intake structure for cooling water (owned by ECTI) has been constructed and is currently operational. Raw water is withdrawn from the James River directly across from the Virginia Power Breemo Bluff Power Station. Water is stored in the already constructed Bear Garden reservoir.



Above and Above Right: ECTI Raw Water Intake Structure. Note the Virginia Power - Bremo Bluff Power Station directly across river in background. Below left – ECTI Raw water intake power supply/junction with Pump house in Background. Below right Proposed outfall 001 discharge structure.





Above – The proposed outfall 001 discharge structure. Note its placement rather high on river bank. There is an approximate 25 foot distance to waterline. Some type of conveyance to river is recommended to avoid erosion and bank destabilization in this area.



Above right, unnamed tributary that outfall 002 will discharge to (at upstream point).
Below ECTI Raw water reservoir

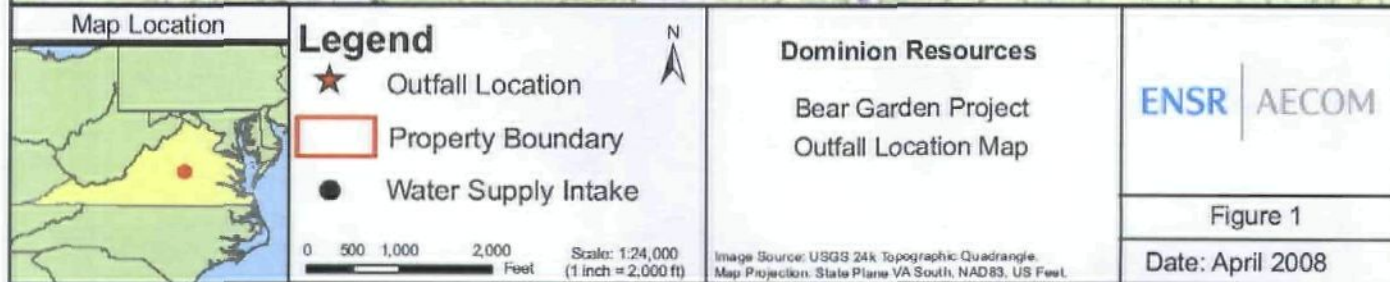
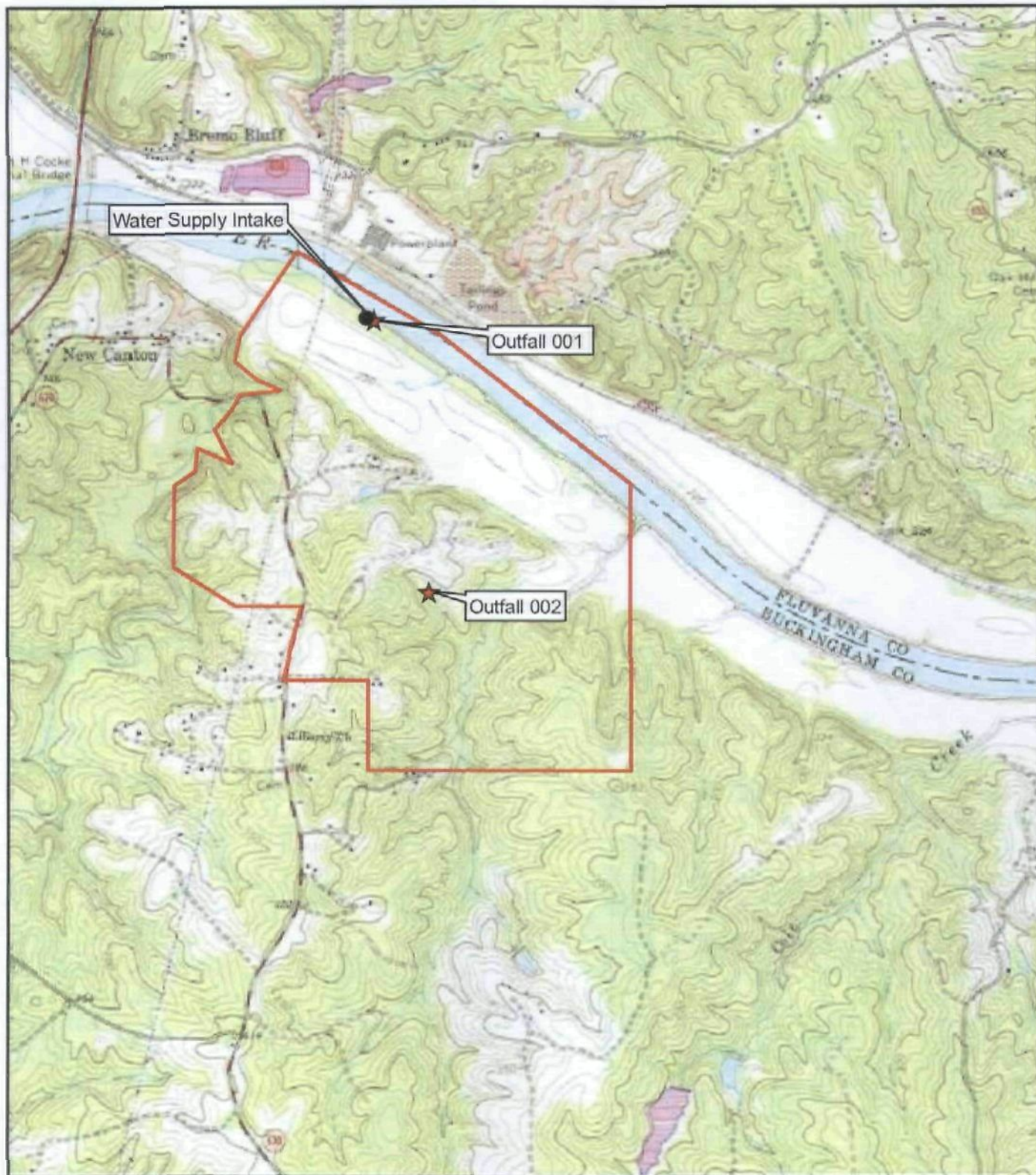


ATTACHMENT 2

DISCHARGE LOCATION/TOPOGRAPHIC MAP

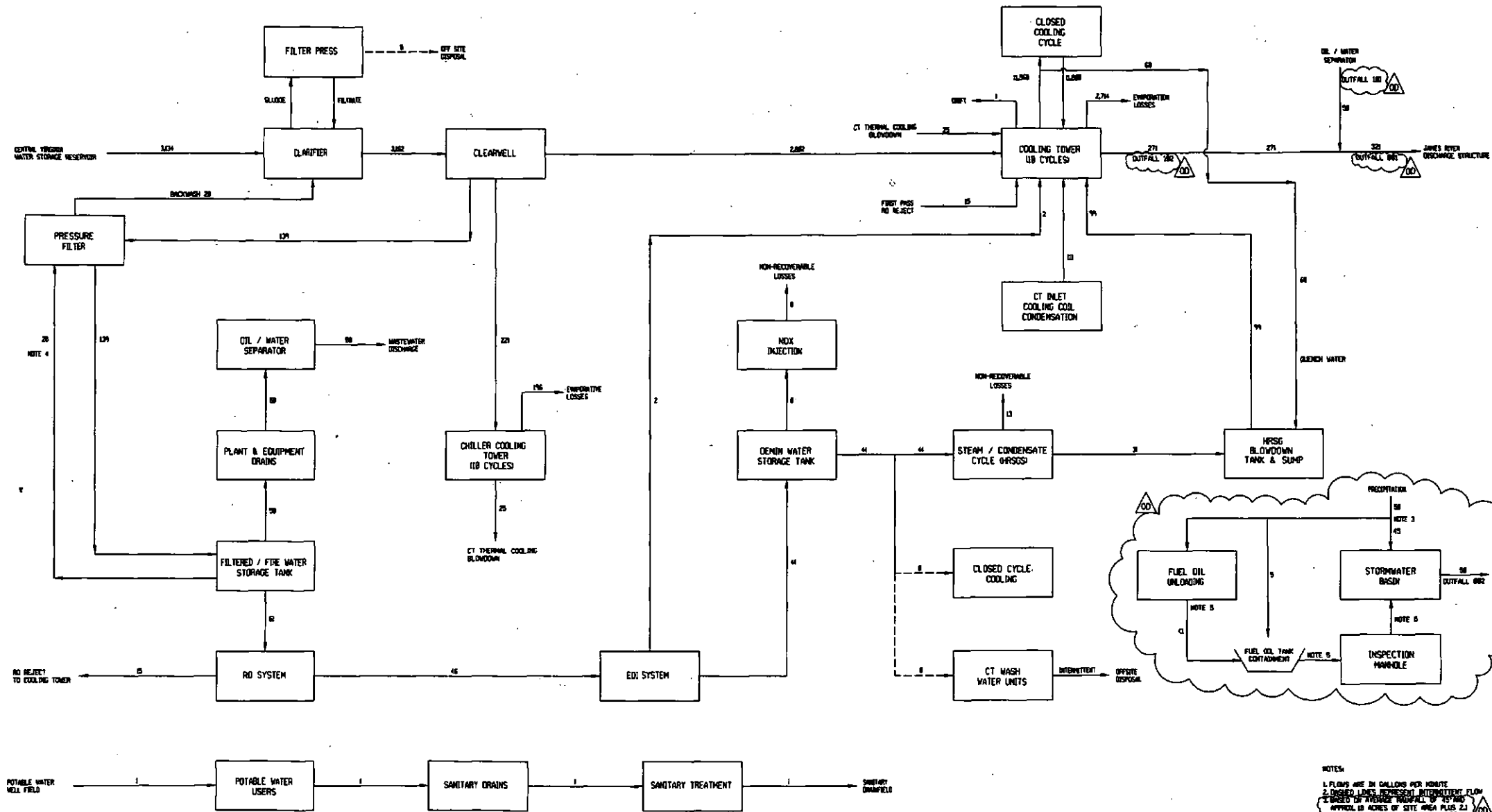


OUTFALL 001 Proposed Outfall location



ATTACHMENT 3

**SCHEMATIC/PLANS & SPECS/SITE MAP/
WATER BALANCE**



REV.	DATE	REVISION DESCRIPTION	DESIGN	DATE	BY	CHKD.	DATE	BY	REF.	NO.	REFERENCE DRAWING	RESERVED FOR PROFESSIONAL ENGINEER'S SEAL, IF APPLICABLE
0	7/31/08	ISSUED FOR CLIENT REVIEW										
0A	8/11/08	ISSUED FOR CLIENT REVIEW										
0B	10/16/08	ISSUED INCORPORATING CLIENT COMMENTS										
0C	11/10/08	INCORPORATING CLIENT COMMENTS FOR CLIENT REVIEW										
0D	04/08/09	INCORPORATING CLIENT AND VEE COMMENTS										

FLUOR.

NOTICE: THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF FLUOR CORPORATION AND IS LOANED TO THE BORROWER FOR THEIR CONSTRUCTION USE ONLY. AND IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT SHALL NOT BE REPRODUCED, COPIED, LOAN OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN FOR WHICH IT IS PUBLISHED.

VIRGINIA ELECTRIC AND POWER COMPANY
BEAR GARDEN GENERATING STATION

WATER BALANCE
95 deg F, 43% R.H. DUCT FIRING
WITH CHILLER ON
CTG ON NATURAL GAS

PROJECT NUMBER: A48G00 - 00 - ME - 5 - WB
SHEET NO: 01 - 00

MANUAL CHANGES MARK - YES ☐ NO ☐ DWG. FILE UPDATED - YES ☐ NO ☐ MODEL UPDATED - YES ☐ NO ☐



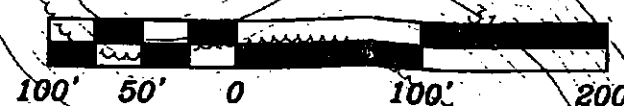
R. STUART ROYER & ASSOCIATES, INC.
CONSULTING ENGINEERS
RICHMOND, VIRGINIA

DOMINION VIRGINIA POWER
BUCKINGHAM SITE

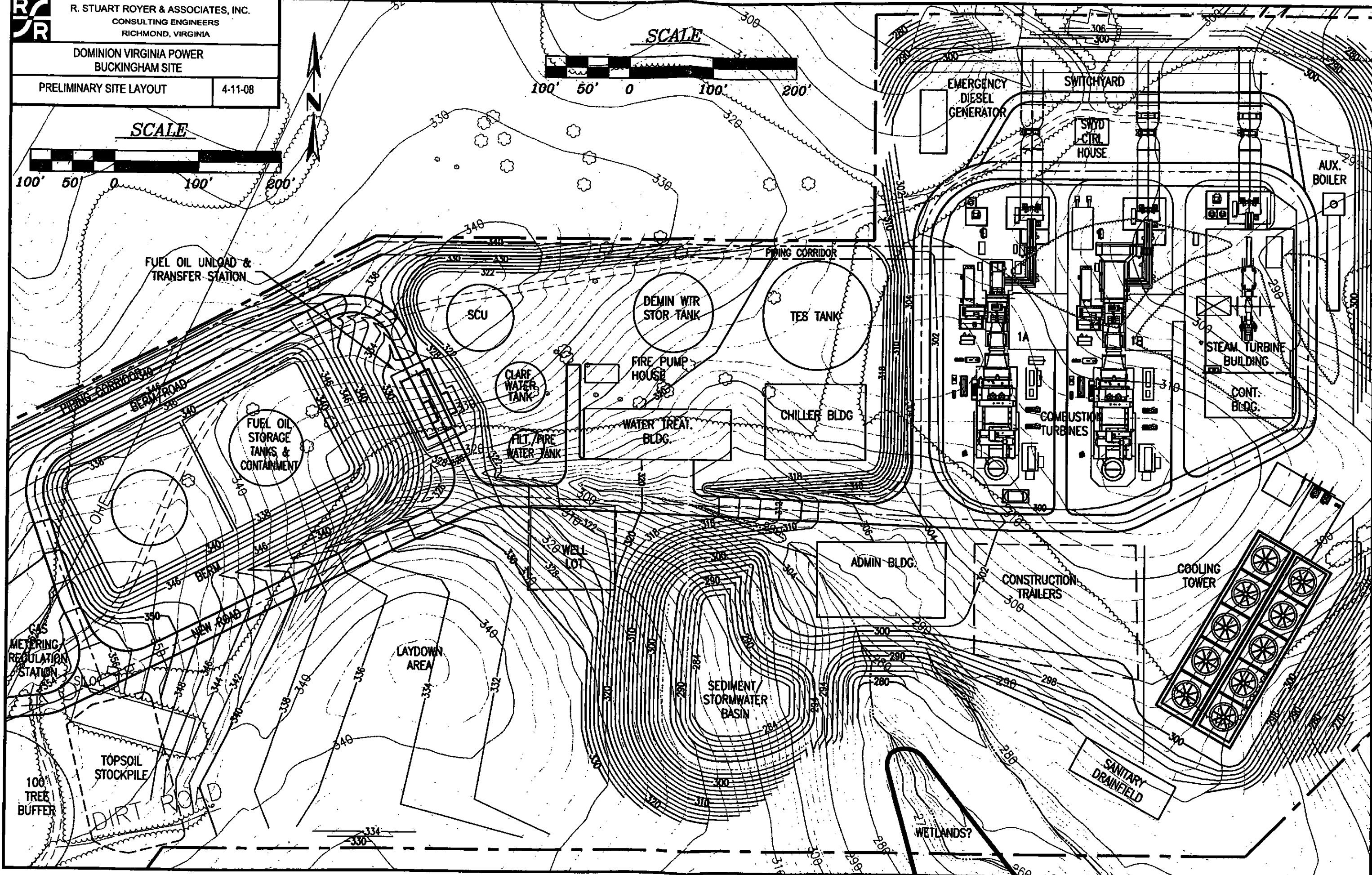
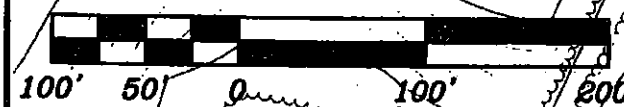
PRELIMINARY SITE LAYOUT

4-11-08

SCALE



SCALE



PERMIT DRAWING

TAX PARCEL 44-1
N/F
JAMES B. JONES
DB. 182 PG. 369

TAX PARCEL 31-136
N/F
JOHN B. BUSCHMANN
DB. 52 PG. 183

AX PARCEL 31-110
N/F
STERLING F. AND
DAWN A. BOYERS
DB. 197 PG. 444

UTILITY ESMT.
DB. 291, PG. 882
-22-

PARCEL 31-97
N/F
E. M. JEFFERIES M
WAY W. JEFFERIES
B. 203 PG. 80

BUCKINGHAM BRANCH
RAILROAD COMPANY
NO TAX PARCEL LISTED
DB 157 PG 305
0.4623 ACRES

100' VIRGINIA ELECTRIC
AND POWER COMPANY
EASEMENT
DB. 107 PG. 655
DB. 107 PG. 658
DB. 36 PG. 603
DB. 36 PG. 606

TAX PARCEL 31-13
N/F
LAURIE P. JONES
DB. 209 PG. 128

TAX PARCEL 31-138
N/F
JOHN B. BUSCHMANN
DB. 61 PG. 434

PARCEL 31-136
N/F
JOHN B. BUSCHMANN
DB 52 PG. 183

TAX PARCEL 31-13
N/F
JOHN B. BUSCHMAN
OB. 63 PG. 586

LAURIE P. JONES
DB. 209 PG. 128

TAX PARCEL 31-13
ETHLYN J. MAXWELL
DB. 209 PG. 130

100 VIRGINIA ELECTRIC
AND POWER COMPANY
EASEMENT

DB. 107	PG. 655
DB. 107	PG. 658
DB. 36	PG. 603
DB. 36	PG. 606

NEW GAS LINE AT BEND:
STATE PLANE COORDINATES
N: 3,776,929.76
E: 11,543,933.59
PLANT COORDINATES
N: 4740.08
E 3439.77
WET WEATHER.

LOCATION OF NEW GAS
LINE AT PROPERTY LINE:
STATE PLANE COORDINATE
N: 3,776,906.42
E: 11,543,962.60
PLANT COORDINATES
N: 4718.72
E: 3468.78

TAX PARCEL 31-13
N/F
JOHN B. BUSCHMAN
DB: 70 PG. 356

TAX PARCEL 43-82
N/F.
ETHEL A. WOODSON
AND
NELLIE V. JONES DB.
177 PG. 77

TAX PARCEL 43-98
N/E MAYO SYBIL
DB. 87 PG#579
FORMERLY COBBELL

ENVIRONMENTAL FEATURES LEGEND

MALCOLM
PIRNIE

MALCOLM PIRNIE, INC.
RICHMOND, VIRGINIA

VIRGINIA ELECTRIC AND POWER COMPANY
BEAR GARDEN GENERATING STATION
BUCKINGHAM COUNTY, VIRGINIA

**SITE PLAN
PERMIT DRAWING**

DATE: 9-23-09
SCALE: 1"=250'
DESIGNED: R.B.T./C.A.W.
DRAWING: R.B.T.
CHECKED: C.A.W.
M.P.I. NO. 638100
R.S.R. NO. 0808
DRAWING NO.
1 OF 1 SHEET

[illegible]

ATTACHMENT 4

DISCHARGE/OUTFALL DESCRIPTION

TABLE I
NUMBER AND DESCRIPTION OF OUTFALLS

OUTFALL L NO.	DISCHARGE LOCATION	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	37° 42' 21" 78° 17' 15"	Outfall 001 effluent consists of low volume wastes (0.072 MGD internal outfall 101), cooling tower blowdown, RO reject, deionization regeneration, cooling coil condensation and thermal cooling blowdown (0.413 MGD internal outfall 102).	In pipe cooling. Final discharge to the James River via the existing bank outfall structure.	0.485 MGD Max design Flow (Form 2D) 0.36 MGD Average flow expected
002	37° 41' 42" 78° 17' 05"	Stormwater from Industrial areas of power station generation block.	Sedimentation basin.	Rainfall dependent
101	Internal to 001	Low Volume Wastes, primarily from service waters (Clean turbines, floors, etc.)	Oil/water separator	0.072 MGD (Form 2D)
102	Internal to 001	Cooling tower blow down, RO reject, deionization regeneration, cooling coil condensation, Thermal cooling blowdown	Dechlorination	0.413 MGD (Form 2D)

- (1) List operations contributing to flow
(2) Give brief description, unit by unit
(3) Give maximum 30-day average flow for industry and design flow for municipal

ATTACHMENT 5

LIMITATIONS/MONITORING

INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 001

Outfall Description: Combined wastewater, low volume wastes and cooling tower blowdown.

SIC CODE: 4911 NAICS CODE: 221112

(X) Final Limits () Interim Limits Effective Dates - From: Permit Effective date To: Permit expiration date

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/l*	lbs/day*	mg/l*	mg/l*	lbs/day*		
Flow (MGD)	NL		NA	NL		Continuous	Recorded
pH (standard units)	NA		6.0	9.0		1/Day	Grab
Total Residual Chlorine [a]	0.23	NA	NA	0.47	NA	1/Day	Grab
Temperature (°C) [b]	NA	NA	NA	32	NA	Continuous	Recorded

* = UNLESS OTHERWISE NOTED NA = NOT APPLICABLE NL = NO LIMIT, MONITORING REQUIREMENT ONLY

TIRE = TOTALIZING, INDICATING AND RECORDING EQUIPMENT

1/Year = Between January 1 and December 31, due January 10 of following year.

[a] See Parts I.B.7.a. and I.B.7.b. for quantification levels and reporting requirements, respectively.

[b] See Parts I.B.12. and I.B.13. for additional temperature limitations and monitoring requirements.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

BASES FOR LIMITATIONS/MONITORING:

PARAMETER	MULTIPLIER OR PRODUCTION	TECHNOLOGY	WATER QUALITY	BEST PROFESSIONAL JUDGMENT
Flow, pH				X
Total Residual Chlorine, Temperature			X	

INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 101

Outfall Description: Low volume waste sources.

SIC CODE: 4911 NAICS CODE: 221112

(X) Final Limits () Interim Limits Effective Dates - From: Permit Effective date To: Permit expiration date

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/l*	lbs/day*	mg/l*	mg/l*	lbs/day*		
Flow (MGD)	NL		NA	NL		1/Month	Estimated
Total Suspended Solids	30	NA	NA	100	NA	1/Month	Grab
Oil and Grease	15	NA	NA	20	NA	1/Month	Grab

* = UNLESS OTHERWISE NOTED NA = NOT APPLICABLE NL = NO LIMIT, MONITORING REQUIREMENT ONLY

BASES FOR LIMITATIONS/MONITORING:

PARAMETER	MULTIPLIER OR PRODUCTION	TECHNOLOGY	WATER QUALITY	BEST PROFESSIONAL JUDGMENT
Flow				X
TSS (mg/l)		X		
Oil & Grease		X		

INDUSTRIAL EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 102

Outfall Description: Cooling tower blowdown.

SIC CODE: 4911 NAICS CODE: 221112

(X) Final Limits () Interim Limits Effective Dates - From: Permit Effective date To: Permit expiration date

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS	
	MONTHLY AVERAGE		MINIMUM	MAXIMUM		FREQUENCY	SAMPLE TYPE
	mg/l*	lbs/day*	mg/l*	mg/l*	lbs/day*		
Flow (MGD)	NL		NA	NL		1/Month	Estimated
Free Available Chlorine	0.2	NA	NA	0.5	NA	1/Month	Grab
126 priority pollutants contained in chemicals added for cooling tower maintenance except Cr & Zn	ND	NA	NA	ND	NA	1/Month	Grab
Total Chromium [a][b]	0.2	NA	NA	0.2	NA	1/Month	Grab
Total Zinc [a][b]	1.0	NA	NA	1.0	NA	1/Month	Grab

* = UNLESS OTHERWISE NOTED NA = NOT APPLICABLE NL = NO LIMIT, MONITORING REQUIREMENT ONLY

[a] See Parts I. B.7.a. and I.B.7.b. for quantification levels and reporting requirements, respectively.

[b] Any violation of the maximum daily discharge limitation shall be reported in accordance with Part II., section I. of this permit.

BASES FOR LIMITATIONS/MONITORING:

PARAMETER	MULTIPLIER OR PRODUCTION	TECHNOLOGY	WATER QUALITY	BEST PROFESSIONAL JUDGMENT
Flow				X
Free Available Chlorine (mg/l)		X		
126 priority pollutants except Cr & Zn (µg/l)		X		
Total Cr (µg/l)		X		
Total Zn (µg/l)		X		

STORM WATER EFFLUENT LIMITATIONS/MONITORING

OUTFALL # 002

Outfall Description: Storm water from regulated SIC code industrial activity areas at a natural gas and oil fired steam-electric generating power station.

SIC CODE: 4911 NAICS CODE: 221112

() Final Limits () Interim Limits Effective Dates - From: Permit Effective date To: Permit expiration date

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS [a]	
	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
	mg/l*	mg/l*		
Flow (MGD)	NA	NL	1/Year	Estimated
pH (standard units)	6.0	9.0	1/Year	Grab
Total Recoverable Iron	NA	NL	1/Year	Grab
Total Petroleum Hydrocarbons	NA	NL	1/Year	Grab
Total Suspended Solids	NA	NL	1/Year	Grab

* = UNLESS OTHERWISE NOTED NA = NOT APPLICABLE NL = NO LIMIT, MONITORING REQUIREMENT ONLY

1/Year = Between January 1 and December 31, due January 10 of following year.

[a] Storm event sampling for this outfall shall not be subject to the specified storm event monitoring requirements (0.1 inch; 72 hours separation; storm event duration; rainfall measurements). All other requirements specified under Part I.D.1.a. and b. (General Storm Water Conditions) shall apply.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

BASES FOR LIMITATIONS/MONITORING:

PARAMETER	INDUSTRIAL STORM WATER CATEGORY	TECHNOLOGY	WATER QUALITY	BEST PROFESSIONAL JUDGMENT
Flow, pH, TPH				X
Total Recoverable Iron, TSS,				X (based on the permits for storm water from industrial sites - EPA's multi-sector permit and DEQ's general permit)

ATTACHMENT 6

SPECIAL CONDITIONS

VPDES PERMIT PROGRAM
LIST OF SPECIAL CONDITIONS

B. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1. Permit Reopeners

a. Water Quality Criteria Reopener

Should effluent monitoring indicate the need for any water quality-based limitation, this permit may be modified or, alternatively, revoked and reissued to incorporate appropriate limitations.

b. Chesapeake Bay Nutrients Reopener

This permit may be modified or, alternatively, revoked and reissued to incorporate new or alternative nutrient limitations and/or monitoring requirements should the State Water Control Board adopt new nutrient standards for the waterbody receiving the discharge, including the Chesapeake Bay or its tributaries, or if a future water quality regulation or statute requires new or alternative nutrient control.

c. Total Maximum Daily Load (TMDL) Reopener

This permit shall be modified or, alternatively, revoked and reissued if any approved waste load allocation procedure, pursuant to section 303(d) of the Clean Water Act, imposes waste load allocations, limits or conditions on the facility that are not consistent with the requirements of this permit.

2. Licensed Wastewater Operator Requirement

No licensed wastewater works operator is required at this permitted facility.

3. Operations and Maintenance (O & M) Manual

The permittee shall develop and submit for approval an O & M Manual for the treatment works to the DEQ Regional Office. This manual shall detail the practices and procedures which will be followed to ensure compliance with the requirements of this permit. The permittee shall maintain an accurate, approved O&M Manual for the treatment works and operate the treatment works in accordance with the approved O & M manual. This manual shall include, but not necessarily be limited to, the following items, as appropriate:

- a. Treatment works design and operation, routine preventative maintenance of units within the treatment system, critical spare parts inventory and record keeping;
- b. Procedures for measuring and recording the duration and volume of treated wastewater discharged;
- c. Techniques to be employed in the collection, preservation and analysis of effluent samples; and,
- d. A plan for the management and/or disposal of waste solids and residues;

Any changes in the practices and procedures followed by the permittee shall be documented and submitted for approval within 90 days of the effective date of the changes. Upon approval of the submitted manual changes, the revised manual becomes an enforceable part of this permit. Noncompliance with the O & M Manual shall be deemed a violation of the permit.

Manual Due: Prior to the completion of construction.

4. Notification Levels

The permittee shall notify the Department as soon as they know or have reason to believe:

- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Board.
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - (1) Five hundred micrograms per liter (500 ug/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application.
 - (4) The level established by the Board.

5. New Discharges Permitted From Application Form 2D

In accordance with the requirements of VPDES application Form 2D, the permittee shall complete and submit Items V and VI of Form 2C, for Outfalls 001, 101, and 102. Following an evaluation of the required information, this permit may be modified or, alternatively, revoked and reissued in order to incorporate additional or different permit conditions.

Form 2C Information Due: No later than 2 years following the commencement of discharge or with the permit reissuance application if that application due date is less than two years after the commencement of discharge.

6. Form 2F Sampling

The permittee shall complete and submit Part VII of Form 2F for outfall 002.

Form 2F Information Due: No later than one year following the commencement of operations of the power station or with the permit reissuance application, if that application due date is less than one year after the start of operations and a qualifying rain event occurred.

7. Compliance Reporting Under Part I.A. and I.B.

a. Quantification Levels

- (1) Maximum quantification levels (QL) shall be as follows:

<u>Effluent Characteristic</u>	<u>Quantification Level</u>
Chlorine	100 µg/l
Total Chromium	10.0 µg/l
Total Zinc	20.0 µg/l

- (2) The permittee may use any approved method which has a QL equal to or lower than the QL listed in a.(1) above. The QL is defined as the lowest concentration used to calibrate a measurement system in accordance with the procedures published for the method.
- (3) It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sampling and analytical procedures. QA/QC information shall be documented to confirm that appropriate analytical procedures have been used and the required QLs have been attained.
- (4) An appropriate analytic method for metals shall be selected from the following list of EPA methods, or any approved method in 40 CFR Part 136, which will achieve a QL that is less than or equal to the QL specified in a.(1) above.

<u>Metal</u>	<u>Analytical Methods</u>
Chromium	1639
Zinc	1638; 1639

b. Reporting

- (1) **Monthly Average** -- Compliance with the monthly average limitations and/or reporting requirements for the parameters listed in a.(1) above shall be determined as follows: All concentration data below the test method QL shall be treated as zeros. All concentration data equal to or above the QL shall be treated as reported. An arithmetic average shall be calculated using all reported data for the month, including the defined zeros. This arithmetic average shall be reported on the DMR as calculated. If all data are below the QL, then the average shall be reported as "<QL". If reporting for quantity is required on the DMR and the calculated concentration is <QL, then report "<QL" for the quantity; otherwise, use the calculated concentration to calculate the quantity.
- (2) **Daily maximum** -- Compliance with the daily maximum limitations and/or reporting requirements for the parameters listed in a.(1) above shall be determined as follows: All concentration data below the test method QL shall be treated as zeros. All concentration data equal to or above the QL shall be treated as reported. An arithmetic average of the values shall be calculated using all reported data, including the defined zeros, collected within each day during the reporting month. The maximum value of these daily averages thus determined shall be reported on the DMR as the Daily Maximum. If all data for each daily maximum are below the QL, then the average shall be reported as <[QL]. If reporting for quantity is required on the DMR and the calculated concentration for each daily average is <QL, then report "<QL" for the quantity; otherwise, use the calculated maximum value of the daily averages to calculate the quantity.
- (3) Any single datum required shall be reported as "<QL" if it is less than the test method QL listed in a.(1) above. Otherwise, the numerical value shall be reported.

8. Water Quality Monitoring

The permittee shall monitor the effluent at outfall 001 for the substances noted in Attachment A of the permit according to the indicated analysis number, quantification level, sample type and frequency. **Monitoring shall be initiated after the start of the third year from the permit's effective date.** Using Attachment A as the reporting form, the data shall be submitted with the next permit reissuance application, if a discharge commenced prior to the VPDES renewal application due date. Monitoring and analysis shall be conducted in accordance with 40 CFR Part 136 or alternative EPA approved method. It is the responsibility of the permittee to ensure that proper QA/QC protocols are followed during the sample gathering and analytical procedures. The DEQ will use these data for making specific permit decisions in the future. This permit may be modified or, alternatively, revoked and reissued to incorporate limits for any of the substances listed in Attachment A.

Completed Attachment A Due: No later than with submission of the VPDES reissuance application.

9. Cooling Water and Boiler Additives

- a. If at any time during the life of this permit, the permittee decides to treat any non-contact cooling water unit(s) and/or boiler system(s) with chemical additives, the following requirements shall be satisfied.

At least thirty (30) days prior to implementing any chemical addition to the cooling water and/or boiler equipment, the permittee shall notify the DEQ Regional Office, in writing, of the following:

- (1) The chemical additives to be employed and their purpose. Provide to the staff for review, a Material Safety Data Sheet (MSDS) for each proposed additive;
 - (2) Schedule of additive usage; and,
 - (3) Wastewater treatment and/or retention to be provided during the use of additives.
- b. Should the addition of treatment chemicals significantly alter the characteristics of the effluent from the cooling water and/or boiler unit(s) or their usage becomes persistent or continuous, this permit shall be modified or, alternatively, revoked and reissued to include appropriate limitations or conditions.

10. PCB Discharge Prohibition

There shall be no discharge of polychlorinated biphenyl compounds, such as those commonly used for transformer fluid.

11. Additional Instructions Regarding 126 Priority Pollutants (Outfall 102)

In lieu of monitoring for the 126 priority pollutants listed in the attached Attachment A (including Total Chromium and Total Zinc), the permittee may submit engineering calculations which demonstrate that the regulated pollutants are not detectable, by the analytical methods in 40 CFR Part 136, in the cooling tower blowdown discharge (Outfall 102). The permittee shall submit annual reports certifying that the chemicals being used for cooling tower maintenance do not contain any of the 126 priority pollutants. Monitoring requirements for the applicable pollutants will become effective if the facility begins to use chemicals containing any of the 126 priority pollutants.

Annual Reports Due: Within 30 days after the commencement of discharge from outfall 102 with subsequent reports due by February 10 of each year.

12. Additional Temperature Limitations

- a. Any rise above natural instream temperature shall not exceed 3°C.
- b. The maximum hourly instream temperature change shall not exceed 2°C at the boundaries of the mixing zone. The permittee is required to retain hourly effluent temperature data at the facility. The content and format of such records shall be arranged with the Director, Blue Ridge Regional Office. These records shall be available for inspection by the DEQ and shall be current for the most recent three years.

The permittee shall submit a written notice of compliance or non-compliance of this condition monthly along with the Discharge Monitoring Report (DMR). In case of non-compliance, the notice shall include the cause of non-compliance and any remedial action taken to correct the problem.

13. Mixing Zone Requirements/Monitoring

The permittee shall comply with all applicable State Water Quality Standards for temperature outside the approved thermal mixing zone. For purposes of this permit, the approved mixing zone is defined as that portion of the James River extending from five feet upstream of the effluent discharge to a point 95 feet downstream of the effluent discharge, bounded on the south by the shoreline, and on the north by an imaginary line extending between the above noted upstream and downstream points, at a distance of 20 feet from the bank. A map showing the approved mixing zone is incorporated in this permit. See Attachment B.

In order to verify the spatial mixing zone and compliance, monitoring shall take place during the months of January/February and July/August. The study shall be initiated within six (6) months of commencement of facility discharge. The monitoring requirements shall consist of a temperature plot of the effluent discharge within the above noted defined mixing zone. The excess temperature plots will show two degree Celsius isotherms and will be taken as near to full plant operating conditions as reasonably possible. This plot will be compared to the background river temperature at the time of the survey.

Results of the mixing zone survey shall be submitted to DEQ by April 10th for surveys conducted in January/February and by October 10th for surveys conducted in July/August.

In addition to the above, during the term of this permit, the permittee shall develop a predictive instream temperature model ultimately capable of demonstrating continuous compliance with the permit required instream temperature limitations, at the edge of the approved mixing zone. Field data generated during the semiannual temperature studies is to be utilized in the development of this predictive model.

Documentation of development, inputs, methods, content and completion of the predictive temperature model shall be submitted with the reissuance VPDES application.

14. Notification of Commencement of Discharge

Within 10 days of commencement of discharge from the facility, the permittee shall submit written notification to DEQ which provides the first day of discharge. This first day of discharge will be used as the trigger date for all other permit conditions which drive off the commencement of discharge.

15. Permit Application Requirement

In accordance with Part II. M. of this permit, a new and complete permit application shall be submitted for the reissuance of this permit.

Application Due: No later than 30 (actual 180-day date)

C. TOXICS MANAGEMENT PROGRAM

1. Biological Monitoring:

- a. In accordance with the schedule in 2. below and starting with the first full quarter from commencement of discharge from the facility, the permittee shall conduct quarterly acute toxicity tests until there are a minimum of 10 tests for each species. The permittee shall collect 24-hour flow-proportioned composite samples of final effluent from Outfall 001. The acute tests to use are:

48 Hour Static Acute test using *Ceriodaphnia dubia*
48 Hour Static Acute test using *Pimephales promelas*

These acute tests shall be performed with a minimum of 5 dilutions, derived geometrically, for calculation of a valid LC₅₀. Express the results as TU_a (Acute Toxic Units) by dividing 100/LC₅₀ for DMR reporting.

The permittee may provide additional samples to address data variability during the period of initial data generation. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.

- b. The test dilutions should be able to determine compliance with the following endpoint.

Acute LC_{50} of 12% equivalent to a TU_a of 8.33

- c. The test data may be evaluated by STATS.EXE for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of 1.a. may be discontinued.
- d. If after evaluating the data, it is determined that no limit is needed, the permittee shall continue acute and chronic toxicity testing (both species) of the outfall annually, as on the reporting schedule in 2.
- e. All applicable data will be reevaluated for reasonable potential at the end of the permit term.

2. Reporting Schedule:

The permittee shall report the results on the DMR and supply 1 copy of the toxicity test reports specified in this Toxics Management Program in accordance with the following schedule:

Period	Compliance Periods	DMR/Report Submission Dates
Quarter 1	First full calendar quarter after commencement of discharge	By the 10 th of the month, following the first full calendar quarter
Quarter 2	2 nd Full Calendar Quarter	By the 10 th of the month following quarter
Quarter 3	3 rd Full Calendar Quarter	By the 10 th of the month following quarter
Quarter 4	4 th Full Calendar Quarter	By the 10 th of the month following quarter
Quarter 5	5 th Full Calendar Quarter	By the 10 th of the month following quarter
Quarter 6	6 th Full Calendar Quarter	By the 10 th of the month following quarter
Quarter 7	7 th Full Calendar Quarter	By the 10 th of the month following quarter
Quarter 8	8 th Full Calendar Quarter	By the 10 th of the month following quarter
Quarter 9	9 th Full Calendar Quarter	By the 10 th of the month following quarter
Annual 1	Within 3 months of 9 th Quarter	By the 10 th of the month following 3 month period
Annual 2	Within 12 months of Annual 1	By the 10 th of the twelfth month following Annual 1 submission

1st quarter (January 1 - March 31, **due April 10**); 2nd quarter (April 1 - June 30, **due July 10**); 3rd quarter (July 1 - September 30, **due October 10**); 4th quarter (October 1 - December 31, **due January 10**)

D. STORM WATER MANAGEMENT CONDITIONS

1. General Storm Water Conditions

a. Sample Type

For all storm water monitoring required in Part I.A. or other applicable sections of this permit, a minimum of one grab sample shall be taken. Unless otherwise specified, all such samples shall be collected from a discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event. The required 72-hour storm event interval is waived where the preceding measurable storm event did not result in a measurable discharge from the facility. The required 72-hour storm event interval may also be waived where the permittee documents that less than a 72-hour interval is representative for local storm events during the season when sampling is being conducted. The grab sample shall be taken during the first 30 minutes of the discharge. If the collection of a grab sample during the first 30 minutes is impracticable, a grab sample can be taken during the first hour of the discharge, and the permittee shall submit with the monitoring report an explanation of why a grab sample during the first 30 minutes was impracticable. If storm water discharges associated with industrial activity commingle with process or non-process water, then where practicable, the permittee must attempt to sample the storm water discharge before it mixes with the non-storm water discharge.

b. Recording of Results

For each measurement or sample taken pursuant to the storm event monitoring requirements of this permit, the permittee shall record and report with the Discharge Monitoring Reports (DMRs) the following:

- (1) The date and duration (in hours) of the storm event(s) sampled;
- (2) The rainfall measurements or estimates (in inches) of the storm event that generated the sampled runoff;
- (3) The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and,

In addition, the permittee shall maintain a monthly log documenting the amount of rainfall received at this facility on a daily basis. A summarization of this information shall also be submitted with the DMRs.

In the event that sampling of an outfall is required but is not possible due to the absence of effluent flow during a particular testing period, the permittee shall provide written notification to DEQ with the DMRs for the month following the period in which samples were to be collected.

c. Sampling Waivers

When a permittee is unable to collect storm water samples required in Part I.A. or other applicable sections of this permit within a specified sampling period due to adverse climatic conditions, the permittee shall collect a substitute sample from a separate qualifying event in the next period and submit these data along with the data for the routine sample in that period. Adverse weather conditions that may prohibit the collection of samples include weather conditions that create dangerous conditions for personnel (such as local flooding, high winds, hurricanes, tornadoes, electrical storms, etc.) or otherwise make the collection of a sample impracticable (drought, extended frozen conditions, etc.). This sampling waiver for adverse climatic conditions applies to the quarterly visual examinations (2.e. below) as well.

d. Representative Discharges

When a facility has two or more outfalls that, based on a consideration of industrial activities, significant materials and management practices and activities within the area drained by the outfalls, the permittee reasonably believes substantially identical effluents are discharged, the permittee may test the effluent of one of such outfalls and report that the quantitative data also apply to the substantially identical outfall(s) provided that: (1) the representative outfall determination has been approved by DEQ prior to data submittal; and, (2) the permittee includes in the SWPPP a description of the location of the outfalls and explains in detail why the outfalls are expected to discharge substantially identical effluents. This sampling waiver for substantially identical discharges applies to the quarterly visual examinations (2.e. below) as well.

e. Quarterly Visual Examination of Storm Water Quality

The permittee must perform and document a quarterly visual examination of a storm water discharge associated with industrial activity from each outfall, except discharges exempted below. The examination(s) must be made at least once in each of the following three-month periods: January through March, April through June, July through September, and October through December. The visual examination must be made during daylight hours (e.g., normal working hours). If no storm event resulted in runoff from the facility during a monitoring quarter, the permittee is excused from visual examinations for that quarter provided that documentation is included with the monitoring records indicating that no runoff occurred. The documentation must be signed and certified in accordance with Part II.K. of this permit.

- (1) Visual examinations must be made of samples collected within the first 30 minutes (or as soon thereafter as practical, but not to exceed 1 hour) of when the runoff or snowmelt begins discharging from the facility. The examination must document observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution. The examination must be conducted in a well-lit area. No analytical tests are required to be performed on the samples. All samples (except snow melt samples) must be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previous measurable (greater than 0.1 inch rainfall) storm event. The 72-hour storm interval is waived when the preceding measurable storm did not yield a measurable discharge or if the permittee is able to document that less than a 72-hour interval is representative for local storm events during the sampling period. Where practicable, the same individual should carry out the collection and examination of discharges for the entire permit term. If no qualifying storm event resulted in runoff from the facility during a monitoring quarter, the permittee is excused from visual examinations for that quarter provided that documentation is included with the monitoring records indicating that no qualifying storm event occurred that resulted in storm water runoff during the quarter. The documentation must be signed and certified in accordance with Part II.K.
- (2) The visual examination reports must be maintained onsite with the SWPPP. The report must include the outfall location, the examination date and time, examination personnel, the nature of the discharge (i.e., runoff or snow melt), visual quality of the storm water discharge (including observations of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution), and probable sources of any observed storm water contamination.

f. Allowable Non-storm Water Discharges.

- (1) The following non-storm water discharges are authorized by this permit provided the non-storm water component of the discharge is in compliance with paragraph f.(2) below.
 - (a) Discharges from fire fighting activities;
 - (b) Fire hydrant flushings;
 - (c) Potable water, including water line flushings;

- (d) Uncontaminated air conditioning or compressor condensate;
- (e) Irrigation drainage;
- (f) Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with manufacturer's instructions;
- (g) Pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed);
- (h) Routine external building wash down which does not use detergents;
- (i) Uncontaminated ground water or spring water;
- (j) Foundation or footing drains where flows are not contaminated with process materials such as solvents;
- (k) Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown or drains).

(2) Except for flows from fire fighting activities, the SWPPP must include:

- (a) Identification of each allowable non-storm water source;
- (b) The location where the non-storm water is likely to be discharged; and,
- (c) Descriptions of any best management practices (BMPs) that are being used for each source.

(3) If mist blown from cooling towers is included as one of the allowable non-storm water discharges, the facility must specifically evaluate the potential for the discharges to be contaminated by chemicals used in the cooling tower and must select and implement BMPs to control such discharges so that the levels of cooling tower chemicals in the discharges would not cause or contribute to a violation of an applicable water quality standard.

g. Releases of Hazardous Substances or Oil in Excess of Reportable Quantities

The discharge of hazardous substances or oil in the storm water discharge(s) from the facility shall be prevented or minimized in accordance with the SWPPP for the facility. This permit does not authorize the discharge of hazardous substances or oil resulting from an onsite spill. This permit does not relieve the permittee of the reporting requirements of 40 CFR 110, 40 CFR 117 and 40 CFR 302 or § 62.1-44.34:19 of the Code of Virginia. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR 110, 40 CFR 117 or 40 CFR 302 occurs during a 24-hour period, the permittee is required to notify DEQ in accordance with the requirements of Part II.G. of this permit as soon as he or she has knowledge of the discharge. Where a release enters a municipal separate storm sewer system (MS4), the permittee shall also notify the owner of the MS4. The SWPPP required by this permit must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

h. Additional Requirements for Salt Storage

Storage piles of salt used for deicing or other commercial or industrial purposes must be enclosed or covered to prevent exposure to precipitation (except for exposure resulting from adding or removing materials from the pile). Piles do not need to be enclosed or covered where storm water from the pile is not discharged to state waters or the discharges from the piles are authorized under another permit.

2. Storm Water Pollution Prevention Plan (SWPPP)

A SWPPP must be developed for this facility. The plan, and any modifications, shall be prepared in accordance with good engineering practices. The plan shall identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges from the facility. In addition,

the plan shall describe and ensure the implementation of practices that are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility and assure compliance with the terms and conditions of this permit. The permittee must implement the provisions of the SWPPP as a condition of this permit.

The SWPPP requirements of this permit may be fulfilled by incorporating by reference other plans or documents such as an erosion and sediment control (ESC) plan, a spill prevention control and countermeasure (SPCC) plan developed for the facility under Section 311 of the Clean Water Act or BMP programs otherwise required for the facility provided that the incorporated plan meets or exceeds the plan requirements of section b. below (Contents of the Plan) of this permit. If an ESC plan is being incorporated by reference, it shall have been approved by the locality in which the activity is to occur or by another appropriate plan approving authority authorized under the Virginia Erosion and Sediment Control Regulation 4 VAC 50-30-10 et seq. All plans incorporated by reference into the SWPPP become enforceable under this permit.

a. Deadlines for Plan Preparation and Compliance

The facility shall prepare and implement the SWPPP as expeditiously as practicable. Verification of compliance with the deadline shall be provided to the DEQ Regional Office, in writing, **within 10 days** of either the deadline or the actual completion date, if completed earlier.

Verify Preparation and Implementation of Plan: No later than 30 days prior to commencement of a stormwater discharge regulated by this permit.

In cases where construction is necessary to implement measures required by the SWPPP, the plan shall contain a schedule that provides compliance with the plan as expeditiously as practicable, but no later than 3 years after the effective date of this permit. Where a construction compliance schedule is included in the plan, the schedule shall include appropriate nonstructural and/or temporary controls to be implemented in the affected portion(s) of the facility prior to completion of the permanent control measure.

b. Contents of the Plan

The contents of the SWPPP shall comply with the requirements listed below and those in section 3. below (Facility-specific Storm Water Conditions) of this permit. These requirements are cumulative. The plan shall include, at a minimum, the following items.

(1) Pollution Prevention Team

The SWPPP shall identify the staff individuals by name or title that comprise the facility's SWPPP team. The pollution prevention team is responsible for assisting the facility or plant manager in developing, implementing, maintaining and revising the facility's SWPPP. Responsibilities of each staff individual on the team must be listed.

(2) Site Description

The SWPPP shall include the following:

(a) Activities at the Facility

A description of the nature of the industrial activities at the facility;

(b) General Location Map

A general location map (e.g., USGS quadrangle or other map) with enough detail to identify the location of the facility and the receiving waters within one mile of the facility;

(c) Site Map

A site map identifying the following:

- (i) Directions of storm water flow (e.g., use arrows to show which ways storm water will flow);
- (ii) Locations of all existing structural BMPs;
- (iii) Locations of all surface water bodies;
- (iv) Locations of potential pollutant sources identified in paragraph b.(3) below (Summary of Potential Pollutant Sources) and where significant materials are exposed to precipitation;
- (v) Locations where major spills or leaks identified in paragraph b.(4) below (Spills and Leaks) have occurred;
- (vi) Locations of the following activities where such activities are exposed to precipitation: fueling stations; vehicle and equipment maintenance and/or cleaning areas; loading/unloading areas; locations used for the treatment, storage or disposal of wastes and liquid storage tanks;
- (vii) Locations of storm water outfalls and an approximate outline of the area draining to each outfall;
- (viii) Location and description of non-storm water discharges;
- (ix) Locations of the following activities where such activities are exposed to precipitation: processing and storage areas; access roads; rail cars and tracks; the location of transfer of substance in bulk; and machinery; and,
- (x) Location and source of runoff from adjacent property containing significant quantities of pollutants of concern to the facility (the permittee may include an evaluation of how the quality of the storm water running onto the facility impacts the facility's storm water discharges).

(d) Receiving Waters and Wetlands

The name of the nearest receiving water(s), including intermittent streams, dry sloughs, arroyos and the areal extent and description of wetland sites that may receive discharges from the facility.

(3) Summary of Potential Pollutant Sources

The SWPPP shall identify each separate area at the facility where industrial materials or activities are exposed to storm water. Industrial materials or activities include, but are not limited to: material handling equipment or activities, industrial machinery, raw materials, intermediate products, byproducts, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product. For each, separate area identified, the description must include:

- (a) A list of the activities in the area (e.g., material storage, equipment fueling and cleaning, cutting steel beams); and,
- (b) A list of the associated pollutant(s) or pollutant parameter(s) (e.g., crankcase oil, iron, biochemical oxygen demand, pH, etc.) for each activity. The pollutant list must include all significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of three years before being covered under this permit and the present.

(4) Spills and Leaks

The SWPPP must clearly identify areas where potential spills and leaks that can contribute pollutants to storm water discharges can occur, and their accompanying drainage points. For areas that are exposed to precipitation or that otherwise drain to a

storm water conveyance at the facility, the plan must include a list of significant spills and leaks of toxic or hazardous pollutants that occurred during the three-year period prior to being covered under this permit. The list must be updated if significant spills or leaks occur in exposed areas of the facility during the term of this permit. Significant spills and leaks include releases of oil or hazardous substances in excess of reportable quantities, and may also include releases of oil or hazardous substances that are not in excess of reporting requirements.

(5) Sampling Data

The SWPPP must include a summary of existing discharge sampling data taken at the facility, and must also include a summary of sampling data collected during the term of this permit.

(6) Storm Water Controls

The SWPPP shall include a description of storm water management controls appropriate for the facility. The description of controls shall address the following minimum components:

(a) Description of Existing and Planned BMPs

The plan shall describe the type and location of existing nonstructural and structural BMPs selected for each of the areas where industrial materials or activities are exposed to storm water. All the areas identified in paragraph b.(3) above (Summary of Potential Pollutant Sources) should have a BMP(s) identified for the area's discharges. For areas where BMPs are not currently in place, include a description of appropriate BMPs that will be used to control pollutants in storm water discharges. Selection of BMPs should take into consideration:

- (i) The quantity and nature of the pollutants, and their potential to impact the water quality of receiving waters;
- (ii) Opportunities to combine the dual purposes of water quality protection and local flood control benefits, including physical impacts of high flows on streams (e.g., bank erosion, impairment of aquatic habitat, etc.);
- (iii) Opportunities to offset the impact of impervious areas of the facility on ground water recharge and base flows in local streams, taking into account the potential for ground water contamination.

(b) BMP Types to be Considered

The permittee must consider the following types of structural, nonstructural and other BMPs for implementation at the facility. The SWPPP shall describe how each BMP is, or will be, implemented. If this requirement was fulfilled with the area-specific BMPs identified in paragraph b.(6)(a) above (Description of Existing and Planned BMPs), then the previous description is sufficient. However, many of the following BMPs may be more generalized or non-site-specific and therefore not previously considered. If the permittee determines that any of these BMPs are not appropriate for the facility, an explanation of why they are not appropriate shall be included in the plan. The BMP examples listed below are not intended to be an exclusive list of BMPs that may be used. The permittee is encouraged to keep abreast of new BMPs or new applications of existing BMPs to find the most cost effective means of permit compliance for the facility. If BMPs are being used or planned at the facility that are not listed here (e.g., replacing a chemical with a less toxic alternative, adopting a new or innovative BMP, etc.), descriptions of them shall be included in this section of the SWPPP.

(i) Nonstructural BMPs

i.- Good Housekeeping

The permittee must keep all exposed areas of the facility in a clean, orderly manner where such exposed areas could contribute pollutants to storm water discharges. Common problem areas include around trash containers, storage areas and loading docks. Measures must also include a schedule for regular pickup and disposal of garbage and waste materials; routine inspections for leaks and conditions of drums, tanks and containers.

ii.- Minimizing Exposure

Where practicable, industrial materials and activities should be protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, or runoff. Note: Eliminating exposure at all industrial areas may make the facility eligible for the "Conditional Exclusion for No Exposure" provision of 9 VAC 25-31-120 F., thereby eliminating the need for the portion of this permit addressing the storm water associated with industrial activity.

iii.- Preventive Maintenance

The permittee must have a preventive maintenance program that includes timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins), as well as inspection, testing, maintenance and repairing of facility equipment and systems to avoid breakdowns or failures that could result in discharges of pollutants to surface waters.

iv.- Spill Prevention and Response Procedures

The plan must describe the procedures that will be followed for cleaning up spills or leaks. The procedures and necessary spill response equipment must be made available to those employees who may cause or detect a spill or leak. Where appropriate, the plan must include an explanation of existing or planned material handling procedures, storage requirements, secondary containment, and equipment (e.g., diversion valves), that are intended to minimize spills or leaks at the facility. Measures for cleaning up hazardous material spills or leaks must be consistent with applicable RCRA regulations at 40 CFR Part 264 and 40 CFR Part 265.

v.- Routine Facility Inspections

Facility personnel who are familiar with the industrial activity, the BMPs and the SWPPP shall be identified to inspect all areas of the facility where industrial materials or activities are exposed to storm water. These inspections are in addition to, or as part of, the comprehensive site evaluation required under section e. below (Comprehensive Site Compliance Inspections), and must include an evaluation of the existing storm water BMPs. The inspection frequency shall be specified in the plan based upon a consideration of the level of industrial activity at the facility, but

shall be a minimum of quarterly unless more frequent intervals are specified elsewhere in the permit. Any deficiencies in the implementation of the SWPPP that are found must be corrected as soon as practicable, but not later than within 14 days of the inspection, unless permission for a later date is granted in writing by DEQ. The results of the inspections must be documented in the SWPPP, along with any corrective actions that were taken in response to any deficiencies or opportunities for improvement that were identified.

vi.- Employee Training

The SWPPP must describe the storm water employee training program for the facility. The description should include the topics to be covered, such as spill response, good housekeeping, and material management practices, and must identify periodic dates for such training (e.g., every six months during the months of July and January). Employee training must be provided for all employees that work in areas where industrial materials or activities are exposed to storm water, and for employees that are responsible for implementing activities identified in the SWPPP (e.g., inspectors, maintenance people). The training should inform employees of the components and goals of the SWPPP.

(ii) Structural BMPs

i.- Sediment and Erosion Control

The SWPPP shall identify areas at the facility that, due to topography, land disturbance (e.g., construction), or other factors, have a potential for significant soil erosion. The plan must identify structural, vegetative, and/or stabilization BMPs that will be implemented to limit erosion.

ii.- Management of Runoff

The SWPPP shall describe the traditional storm water management practices [permanent structural BMPs other than those which control the generation or source(s) of pollutants] that currently exist or that are planned for the facility. These types of BMPs are typically used to divert, infiltrate, reuse, or otherwise reduce pollutants in storm water discharges from the site. The plan shall provide that all measures that the permittee determines to be reasonable and appropriate, or are required by a state or local authority shall be implemented and maintained. Factors for the permittee to consider when selecting appropriate BMPs should include: the industrial materials and activities that are exposed to storm water, and the associated pollutant potential of those materials and activities; and, the beneficial and potential detrimental effects on surface water quality, ground water quality, receiving water base flow (dry weather stream flow), and physical integrity of receiving waters.

Structural measures should be placed on upland soils, avoiding wetlands and floodplains, if possible. Structural BMPs may require a separate permit under § 404 of the CWA before installation begins.

iii.- Example BMPs

BMPs that could be used include but are not limited to: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff on-site; and sequential systems (which combine several practices).

iv.- Other controls

Off-site vehicle tracking of raw, final, or waste materials or sediments, and the generation of dust must be minimized. Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas must be minimized. Velocity dissipation devices (or equivalent measures) must be placed at discharge locations and along the length of any outfall channel if they are necessary to provide a non-erosive flow velocity from the structure to a water course.

c. Maintenance

All BMPs identified in the SWPPP must be maintained in effective operating condition. If site inspections required by paragraph b.(6)(b)(i)v.- above (Routine Facility Inspections) and/or section d. below (Comprehensive Site Compliance Inspections) identify BMPs that are not operating effectively, maintenance must be performed before the next anticipated storm event, or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. In the case of nonstructural BMPs, the effectiveness of the BMP must be maintained by appropriate means (e.g., spill response supplies available and personnel trained, etc.).

d. Comprehensive Site Compliance Evaluation

The permittee shall conduct facility inspections (site compliance evaluations) at least once a year. The inspections must be done by qualified personnel, and may be either facility employees or outside constituents hired by the facility. The inspectors must be familiar with the industrial activity, the BMPs and the SWPPP and must possess the skills to assess conditions at the facility that could impact storm water quality, and to assess the effectiveness of the BMPs that have been chosen to control the quality of the storm water discharges. If more frequent inspections are conducted, the SWPPP must specify the frequency of inspections.

(1) Scope of the Compliance Evaluation

Inspections must include all areas where industrial materials or activities are exposed to storm water, as identified in paragraph b.(3) above (Summary of Potential Pollutant Sources) and areas where spills and leaks have occurred within the past 3 years.

Inspectors should look for:

- (a) Industrial materials, residue or trash on the ground that could contaminate or be washed away in storm water;
- (b) Leaks or spills from industrial equipment, drums, barrels, tanks or similar containers;
- (c) Off-site tracking of industrial materials or sediment where vehicles enter or exit the site;
- (d) Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas; and,
- (e) Evidence of, or the potential for, pollutants entering the drainage system.

Results of both visual and any analytical monitoring done during the year must be taken into consideration during the evaluation. Storm water BMPs identified in the SWPPP must be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they must be inspected to see whether BMPs are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations must be inspected if possible.

- (2) Based on the results of the inspection, the SWPPP shall be modified as necessary [e.g., show additional controls on the map required by item (c) under paragraph b.(2) above (Site Description); revise the description of controls required by paragraph b.(6) above (Storm Water Controls) to include additional or modified BMPs designed to correct problems identified]. Revisions to the SWPPP shall be completed within two weeks following the inspection, unless permission for a later date is granted in writing by DEQ. If existing BMPs need to be modified or if additional BMPs are necessary, implementation must be completed before the next anticipated storm event, if practicable, but not more than 12 weeks after completion of the comprehensive site evaluation, unless permission for a later date is granted in writing by DEQ.

- (3) Compliance Evaluation Report

A report summarizing the scope of the inspection, name(s) of personnel making the inspection, the date(s) of the inspection, and major observations relating to the implementation of the SWPPP, and actions taken in accordance with paragraph e.(2) above shall be made and retained as part of the SWPPP for at least three years from the date of the inspection. Major observations should include: the location(s) of discharges of pollutants from the site; location(s) of BMPs that need to be maintained; location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location; and location(s) where additional BMPs are needed that did not exist at the time of inspection. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the SWPPP and this permit. The report shall be signed in accordance with Part II K.

- (4) Where compliance evaluation schedules overlap with routine inspections required under paragraph b.(6)(b)(i)v.- above (Routine Facility Inspections), the annual compliance evaluation may be used as one of the routine inspections.

e. Signature and Plan Review

- (1) Signature/Location

The plan shall be signed in accordance with Part II K, and retained on-site at the facility in accordance with Part II B 2.

- (2) Availability

The permittee shall make the SWPPP, annual site compliance inspection report, and other information available to DEQ upon request.

- (3) Required modifications

DEQ may notify the permittee at any time that the plan does not meet one or more of the minimum requirements of this permit. The notification shall identify those provisions of the permit that are not being met, as well as the required modifications. The permittee shall make the required changes to the SWPPP within 60 days of receipt of such notification, unless permission for a later date is granted in writing by DEQ and shall submit a written certification to DEQ that the requested changes have been made.

f. Maintaining an Updated SWPPP

The permittee shall amend the SWPPP whenever:

- (1) There is a change in design, construction, operation, or maintenance at the facility that has a significant effect on the discharge, or the potential for the discharge, of pollutants from the facility;
- (2) During inspections, monitoring, or investigations by facility personnel or by local, state, or federal officials, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants from sources identified under paragraph b.(3) above (Summary of Potential Pollutant Sources), or is otherwise not achieving the general objectives of controlling pollutants in discharges from the facility.

g. Special Pollution Prevention Plan Requirements

- (1) Additional Requirements for Storm Water Discharges Associated With Industrial Activity That Discharge Into or Through Municipal Separate Storm Sewer Systems.
 - (a) In addition to the applicable requirements of this permit, facilities covered by this permit must comply with applicable requirements in municipal storm water management programs developed under VPDES permits issued for the discharge of the municipal separate storm sewer system that receives the facility's discharge, provided the permittee has been notified of such conditions.
 - (b) Permittees that discharge storm water associated with industrial activity through a municipal separate storm sewer system shall make plans available to the municipal operator of the system upon request.
- (2) Additional Requirements for Storm Water Discharges Associated with Industrial Activity from Facilities Subject to EPCRA § 313 Reporting Requirements

Any potential pollutant sources for which the facility has reporting requirements under EPCRA 313 must be identified in the SWPPP in paragraph b.(3) above (Summary of Potential Pollutant Sources). Note: this additional requirement is only applicable if the facility is subject to reporting requirements under EPCRA 313.

"Section 313 water priority chemicals" means a chemical or chemical categories which: (i) are listed at 40 CFR 372.65 (2002) pursuant to § 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986) (42 USC § 11001 et seq.); (ii) are present at or above threshold levels at a facility subject to EPCRA § 313 reporting requirements; and (iii) that meet at least one of the following criteria: (a) are listed in Appendix D of 40 CFR Part 122 (2002) on either Table II (Organic priority pollutants), Table III (Certain metals, cyanides and phenols) or Table V (Certain toxic pollutants and hazardous substances); (b) are listed as a hazardous substance pursuant to § 311(b)(2)(A) of the Clean Water Act at 40 CFR 116.4 (2002); or (c) are pollutants for which EPA has published acute or chronic water quality criteria.

3. Facility-specific Storm Water Conditions

The requirements listed under this section apply to storm water discharges associated with industrial activity from steam electric power generating facilities, including using coal, natural gas, oil, nuclear energy, etc. to produce a steam source, including coal handling areas (Industrial Activity Code "SE"). Storm water discharges from ancillary facilities (e.g., fleet centers, gas turbine stations, and substations) that are not contiguous to a steam electric power generating facility are not included in this permit. Heat capture/heat recovery combined cycle generation facilities are also not included in this permit; however, dual fuel cogeneration facilities that generate electric power are included.

In addition to the requirements of Part I.3.b., the SWPPP shall include, at a minimum, the following items.

a. Site Description

(1) Site Map

The site map shall identify the locations of any of the following: activities or sources that may be exposed to precipitation/surface runoff: storage tanks, scrap yards, general refuse areas; short and long-term storage of general materials (including but not limited to: supplies, construction materials, plant equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment chemicals, fertilizer, and pesticides); landfills; construction sites; and, stock pile areas (such as coal or limestone piles).

(2) Storm Water Controls

(a) Good Housekeeping Measures

(i) Fugitive Dust Emissions

The permittee shall describe and implement measures that prevent or minimize fugitive dust emissions from coal handling areas. The permittee shall consider establishing procedures to minimize off-site tracking of coal dust, such as installing specially designed tires, or washing vehicles in a designated area before they leave the site, and controlling the wash water.

(ii) Delivery Vehicles

The plan must describe measures that prevent or minimize contamination of storm water runoff from delivery vehicles arriving on the plant site. At a minimum the permittee shall consider the following: develop procedures for the inspection of delivery vehicles arriving on the plant site, and ensure overall integrity of the body or container; and, develop procedures to deal with leakage/spillage from vehicles or containers.

(iii) Fuel Oil Unloading Areas

The plan must describe measures that prevent or minimize contamination of precipitation/surface runoff from fuel oil unloading areas. At a minimum the permittee must consider using the following measures, or an equivalent: use of containment curbs in unloading areas; during deliveries, having station personnel familiar with spill prevention and response procedures present to ensure that any leaks or spills are immediately contained and cleaned up; and, use of spill and overflow protection (e.g., drip pans, drip diapers, and/or other containment devices placed beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

(iv) Chemical Loading/Unloading Areas

The permittee must describe and implement measures that prevent or minimize the contamination of precipitation/surface runoff from chemical loading/unloading areas. At a minimum the permittee must consider using the following measures (or their equivalents): use of containment curbs at chemical loading/unloading areas to contain spills; during deliveries, having station personnel familiar with spill prevention

and response procedures present to ensure that any leaks/spills are immediately contained and cleaned up; and, covering chemical loading/unloading areas, and storing chemicals indoors.

(v) **Miscellaneous Loading/Unloading Areas**

The permittee shall describe and implement measures that prevent or minimizes the contamination of storm water runoff from loading and unloading areas. The permittee shall consider the following, at a minimum (or their equivalents): covering the loading area; grading, berming, or curbing around the loading area to divert runoff; or locating the loading/unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems.

(vi) **Liquid Storage Tanks**

The permittee shall describe and implement measures that prevent or minimize contamination of storm water runoff from above ground liquid storage tanks. At a minimum the permittee must consider employing the following measures (or their equivalents): use of protective guards around tanks; use of containment curbs; use of spill and overflow protection; and, use of dry cleanup methods.

(vii) **Large Bulk Fuel Storage Tanks**

The permittee shall describe and implement measures that prevent or minimize contamination of storm water runoff from large bulk fuel storage tanks. At a minimum the permittee must consider employing containment berms (or its equivalent). The permittee shall also comply with applicable State and Federal laws, including Spill Prevention Control and Countermeasures (SPCC).

(viii) **Spill Reduction Measures**

The permittee shall describe and implement measures to reduce the potential for an oil/chemical spill, or reference the appropriate section of their SPCC plan. At a minimum the structural integrity of all above ground tanks, pipelines, pumps and other related equipment shall be visually inspected on a weekly basis. All repairs deemed necessary based on the findings of the inspections shall be completed immediately to reduce the incidence of spills and leaks occurring from such faulty equipment.

(ix) **Oil Bearing Equipment in Switchyards**

The permittee shall describe and implement measures to prevent or minimize contamination of surface runoff from oil bearing equipment in switchyard areas. The permittee shall consider the use of level grades and gravel surfaces to retard flows and limit the spread of spills, and the collection of storm water runoff in perimeter ditches.

(xi) **Residue Hauling Vehicles**

All residue hauling vehicles shall be inspected for proper covering over the load, adequate gate sealing and overall integrity of the container body. Vehicles without load coverings or adequate gate sealing, or with leaking containers or beds must be repaired as soon as practicable.

(xii) Ash Loading Areas

The permittee shall describe and implement procedures to reduce or control the tracking of ash/residue from ash loading areas. Where practicable, clear the ash building floor and immediately adjacent roadways of spillage, debris and excess water before departure of each loaded vehicle.

(xiii) Areas Adjacent to Disposal Ponds or Landfills

The permittee shall describe and implement procedures measures that prevent or minimize contamination of storm water runoff from areas adjacent to disposal ponds or landfills. The permittee must develop procedures to: reduce ash residue which may be tracked on to access roads traveled by residue trucks or residue handling vehicles; and reduce ash residue on exit roads leading into and out of residue handling areas.

(xiv) Landfills, Scrapyards, Surface Impoundments, Open Dumps, General Refuse Sites

The plan must address and include appropriate BMPs for landfills, scrapyards, surface impoundments, open dumps and general refuse sites.

(xv) Vehicle Maintenance Activities

i.- Vehicle and Equipment Storage Areas

The storage of vehicles and equipment awaiting maintenance with actual or potential fluid leaks must be confined to designated areas (delineated on the site map). The permittee shall consider the following measures (or their equivalents): the use of drip pans under vehicles and equipment; indoor storage of vehicles and equipment; installation of berms or dikes; use of absorbents; roofing or covering storage areas; and, cleaning pavement surface to remove oil and grease.

ii.- Fueling Areas

The permittee shall describe and implement measures that prevent or minimize contamination of the storm water runoff from fueling areas. The permittee shall consider the following measures (or their equivalents): covering the fueling area; using spill/overflow protection and cleanup equipment; minimizing storm water runoff to the fueling area; using dry cleanup methods; and, treating and/or recycling collected storm water runoff.

iii.- Material Storage Areas

Storage vessels of all materials (e.g., for used oil/oil filters, spent solvents, paint wastes, hydraulic fluids) must be maintained in good condition, so as to prevent contamination of storm water, and plainly labeled (e.g., "used oil," "spent solvents," etc.). The permittee shall consider the following measures (or their equivalents): indoor storage of the materials; installation of berms/ dikes around the areas; minimizing runoff of storm water to the areas; using dry cleanup methods; and, treating and/or recycling the collected the storm water runoff.

iv.- Vehicle and Equipment Cleaning Areas

The permittee shall describe and implement measures that prevent or minimize contamination of storm water runoff from all areas used for vehicle/equipment cleaning. The permittee shall consider the following measures (or their equivalents): performing all cleaning activities indoors; covering the cleaning operation; ensuring that all wash waters drain to a proper collection system (i.e., not the storm water drainage system); and, treating and/or recycling the collecting the storm water runoff. The discharge of vehicle/equipment wash waters, including tank cleaning operations are not authorized unless specifically addressed in this VPDES permit or discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements.

v.- Vehicle and Equipment Maintenance Areas

The permittee shall describe and implement measures that prevent or minimize contamination of the storm water runoff from all areas used for vehicle/equipment maintenance. The permittee shall consider the following measures (or their equivalents): performing maintenance activities indoors; using drip pans; keeping an organized inventory of materials used in the shop; draining all parts of fluids prior to disposal; prohibiting wet clean up practices where the practices would result in the discharge of pollutants to storm water drainage systems; using dry cleanup methods; treating and/or recycling collected storm water runoff; and, minimizing runoff of storm water to maintenance areas.

(xvi) Material Storage Areas

The permittee shall describe and implement measures that prevent or minimize contamination of storm water runoff from material storage areas (including areas used for temporary storage of miscellaneous products, and construction materials stored in lay down areas). The permittee shall consider the use of the following measures (or their equivalents): flat yard grades; runoff collection in graded swales or ditches; erosion protection measures at steep outfall sites (e.g., concrete chutes, riprap, stilling basins); covering lay down areas; storing materials indoors; and, covering materials temporarily with polyethylene, polyurethane, polypropylene, or hypalon. Storm water runoff may be minimized by constructing an enclosure or building a berm around the area.

(xvii) Comprehensive Site Compliance Evaluation

As part of the evaluation, qualified facility personnel shall inspect the following areas on a monthly basis: coal handling areas, loading/unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long-term and short-term material storage areas.

ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
METALS						
7440-36-0	Antimony, dissolved	(3)	500		G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(3)	300		G or C	1/5 YR
7440-39-3	Barium, dissolved	(3)	70000		G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(3)	35		G or C	1/5 YR
16065-83-1	Chromium III, dissolved ⁽⁸⁾	(3)	2500		G or C	1/5 YR
18540-29-9	Chromium VI, dissolved ⁽⁸⁾	(3)	50		G or C	1/5 YR
7440-50-8	Copper, dissolved	(3)	100		G or C	1/5 YR
7439-89-6	Iron, dissolved	(3)	1000		G or C	1/5 YR
7439-92-1	Lead, dissolved	(3)	300		G or C	1/5 YR
7439-96-5	Manganese, dissolved	(3)	1000		G or C	1/5 YR
7439-97-6	Mercury, dissolved	(3)	1		G or C	1/5 YR
7440-02-0	Nickel, dissolved	(3)	700		G or C	1/5 YR
7782-49-2	Selenium, dissolved	(3)	200		G or C	1/5 YR
7440-22-4	Silver, dissolved	(3)	2		G or C	1/5 YR
7440-28-0	Thallium, dissolved	(4)	(5)		G or C	1/5 YR
7440-66-6	Zinc, dissolved	(3)	1000		G or C	1/5 YR
PESTICIDES/PCB'S						
309-00-2	Aldrin	608	0.05		G or SC	1/5 YR
57-74-9	Chlordane	608	0.2		G or SC	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	(5)		G or SC	1/5 YR
72-54-8	DDD	608	0.1		G or SC	1/5 YR
72-55-9	DDE	608	0.1		G or SC	1/5 YR
50-29-3	DDT	608	0.1		G or SC	1/5 YR
8065-48-3	Demeton	(4)	(5)		G or SC	1/5 YR
60-57-1	Dieldrin	608	0.1		G or SC	1/5 YR
959-98-8	Alpha-Endosulfan	608	0.1		G or SC	1/5 YR
33213-65-9	Beta-Endosulfan	608	0.1		G or SC	1/5 YR
1031-07-8	Endosulfan Sulfate	608	0.1		G or SC	1/5 YR
72-20-8	Endrin	608	0.1		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
7421-93-4	Endrin Aldehyde	(4)	(5)		G or SC	1/5 YR
86-50-0	Guthion	622	(5)		G or SC	1/5 YR
76-44-8	Heptachlor	608	0.05		G or SC	1/5 YR
1024-57-3	Heptachlor Epoxide	(4)	(5)		G or SC	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608	(5)		G or SC	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608	(5)		G or SC	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC or Lindane	608	(5)		G or SC	1/5 YR
143-50-0	Kepone	(9)	(5)		G or SC	1/5 YR
121-75-5	Malathion	(4)	(5)		G or SC	1/5 YR
72-43-5	Methoxychlor	(4)	(5)		G or SC	1/5 YR
2385-85-5	Mirex	(4)	(5)		G or SC	1/5 YR
56-38-2	Parathion	(4)	(5)		G or SC	1/5 YR
11096-82-5	PCB 1260	608	1.0		G or SC	1/5 YR
11097-69-1	PCB 1254	608	1.0		G or SC	1/5 YR
12672-29-6	PCB 1248	608	1.0		G or SC	1/5 YR
53469-21-9	PCB 1242	608	1.0		G or SC	1/5 YR
11141-16-5	PCB 1232	608	1.0		G or SC	1/5 YR
11104-28-2	PCB 1221	608	1.0		G or SC	1/5 YR
12674-11-2	PCB 1016	608	1.0		G or SC	1/5 YR
1336-36-3	PCB Total	608	7.0		G or SC	1/5 YR
8001-35-2	Toxaphene	608	5.0		G or SC	1/5 YR
BASE NEUTRAL EXTRACTABLES						
83-32-9	Acenaphthene	625	10.0		G or SC	1/5 YR
120-12-7	Anthracene	625	10.0		G or SC	1/5 YR
92-87-5	Benzidine	(4)	(5)		G or SC	1/5 YR
56-55-3	Benzo (a) anthracene	625	10.0		G or SC	1/5 YR
205-99-2	Benzo (b) fluoranthene	625	10.0		G or SC	1/5 YR
207-08-9	Benzo (k) fluoranthene	625	10.0		G or SC	1/5 YR
50-32-8	Benzo (a) pyrene	625	10.0		G or SC	1/5 YR
111-44-4	Bis 2-Chloroethyl Ether	(4)	(5)		G or SC	1/5 YR
39638-32-9	Bis 2-Chloroisopropyl Ether	(4)	(5)		G or SC	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0		G or SC	1/5 YR
91-58-7	2-Chloronaphthalene	(4)	(5)		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
218-01-9	Chrysene	625	10.0		G or SC	1/5 YR
53-70-3	Dibenz(a,h)anthracene	625	20.0		G or SC	1/5 YR
84-74-2	Dibutyl phthalate (synonym = Di-n-Butyl Phthalate)	625	10.0		G or SC	1/5 YR
95-50-1	1,2-Dichlorobenzene	624	10.0		G or SC	1/5 YR
541-73-1	1,3-Dichlorobenzene	624	10.0		G or SC	1/5 YR
106-46-7	1,4-Dichlorobenzene	624	10.0		G or SC	1/5 YR
91-94-1	3,3-Dichlorobenzidine	(4)	(5)		G or SC	1/5 YR
84-66-2	Diethyl phthalate	625	10.0		G or SC	1/5 YR
117-81-7	Di-2-Ethylhexyl Phthalate	625	10.0		G or SC	1/5 YR
131-11-3	Dimethyl phthalate	(4)	(5)		G or SC	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0		G or SC	1/5 YR
122-66-7	1,2-Diphenylhydrazine	(4)	(5)		G or SC	1/5 YR
206-44-0	Fluoranthene	625	10.0		G or SC	1/5 YR
86-73-7	Fluorene	625	10.0		G or SC	1/5 YR
118-74-1	Hexachlorobenzene	(4)	(5)		G or SC	1/5 YR
87-68-3	Hexachlorobutadiene	(4)	(5)		G or SC	1/5 YR
77-47-4	Hexachlorocyclopentadiene	(4)	(5)		G or SC	1/5 YR
67-72-1	Hexachloroethane	(4)	(5)		G or SC	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene	625	20.0		G or SC	1/5 YR
78-59-1	Isophorone	625	10.0		G or SC	1/5 YR
98-95-3	Nitrobenzene	625	10.0		G or SC	1/5 YR
62-75-9	N-Nitrosodimethylamine	(4)	(5)		G or SC	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	(4)	(5)		G or SC	1/5 YR
86-30-6	N-Nitrosodiphenylamine	(4)	(5)		G or SC	1/5 YR
129-00-0	Pyrene	625	10.0		G or SC	1/5 YR
120-82-1	1,2,4-Trichlorobenzene	625	10.0		G or SC	1/5 YR

VOLATILES

107-02-8	Acrolein	(4)	(5)		G	1/5 YR
107-13-1	Acrylonitrile	(4)	(5)		G	1/5 YR
71-43-2	Benzene	624	10.0		G	1/5 YR
75-25-2	Bromoform	624	10.0		G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0		G	1/5 YR
108-90-7	Chlorobenzene (synonym = monochlorobenzene)	624	50.0		G	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
124-48-1	Chlorodibromomethane	624	10.0		G	1/5 YR
67-66-3	Chloroform	624	10.0		G	1/5 YR
75-09-2	Dichloromethane (synonym = methylene chloride)	624	20.0		G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0		G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0		G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0		G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	(4)	(5)		G	1/5 YR
78-87-5	1,2-Dichloropropane	(4)	(5)		G	1/5 YR
542-75-6	1,3-Dichloropropene	(4)	(5)		G	1/5 YR
100-41-4	Ethylbenzene	624	10.0		G	1/5 YR
74-83-9	Methyl Bromide	(4)	(5)		G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	(4)	(5)		G	1/5 YR
127-18-4	Tetrachloroethylene	624	10.0		G	1/5 YR
10-88-3	Toluene	624	10.0		G	1/5 YR
79-00-5	1,1,2-Trichloroethane	(4)	(5)		G	1/5 YR
79-01-6	Trichloroethylene	624	10.0		G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0		G	1/5 YR
RADIONUCLIDES						
	Strontium 90 (pCi/L)	(4)	(5)		G or C	1/5 YR
	Tritium (pCi/L)	(4)	(5)		G or C	1/5 YR
	Beta Particle & Photon Activity (mrem/yr)	(4)	(5)		G or C	1/5 YR
	Gross Alpha Particle Activity (pCi/L)	(4)	(5)		G or C	1/5 YR
ACID EXTRACTABLES⁽⁶⁾						
95-57-8	2-Chlorophenol	625	10.0		G or SC	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0		G or SC	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0		G or SC	1/5 YR
51-28-5	2,4-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
87-86-5	Pentachlorophenol	625	50.0		G or SC	1/5 YR
108-95-2	Phenol	625	10.0		G or SC	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0		G or SC	1/5 YR
MISCELLANEOUS						
	Ammonia as NH3-N	350.1	200		C	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
16887-00-6	Chlorides	(4)	(5)		C	1/5 YR
7782-50-5	Chlorine, Total Residual	(4)	100		G	1/5 YR
57-12-5	Cyanide, Total	(4)	10.0		G	1/5 YR
94-75-7	2,4 Dichlorophenoxy acetic acid (synonym = 2,4-D)	(4)	(5)		G or SC	1/5 YR
N/A	<i>E. coli</i> / <i>Enterococcus</i> (N/CML)	(4)	(5)		G	1/5 YR
N/A	Foaming Agents (as MBAS)	(4)	(5)		G	1/5 YR
7783-06-4	Hydrogen Sulfide	(4)	(5)		G or SC	1/5 YR
14797-55-8	Nitrate as N (mg/L)	(4)	(5)		C	1/5 YR
N/A	Sulfate (mg/L)	(4)	(5)		C	1/5 YR
N/A	Total Suspended Solids	(4)	(5)		G	1/5 YR
N/A	Total Dissolved Solids (mg/L)	(4)	(5)		C	1/5 YR
60-10-5	Tributyltin ⁽ⁿ⁾	NBSR 85-3295	(5)		G or C	1/5 YR
93-72-1	2-(2,4,5-Trichlorophenoxy) propionic acid (synonym = Silvex)	(4)	(5)		G or SC	1/5 YR

Name of Principal Exec. Officer or Authorized Agent/Title

Signature of Principal Officer or Authorized Agent/Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

FOOTNOTES:

- (1) Quantification level (QL) is defined as the lowest concentration used for the calibration of a measurement system when the calibration is in accordance with the procedures published for the required method.

The quantification levels indicated for the metals are actually Specific Target Values developed for this permit. The Specific Target Value is the approximate value that may initiate a wasteload allocation analysis. Target values are not wasteload allocations or effluent limitations. The Specific Target Values are subject to change based on additional information such as hardness data, receiving stream flow, and design flows.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information shall be submitted to document that the required quantification level has been attained.

- (2) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For grab metals samples, the individual samples shall be filtered and preserved immediately upon collection.

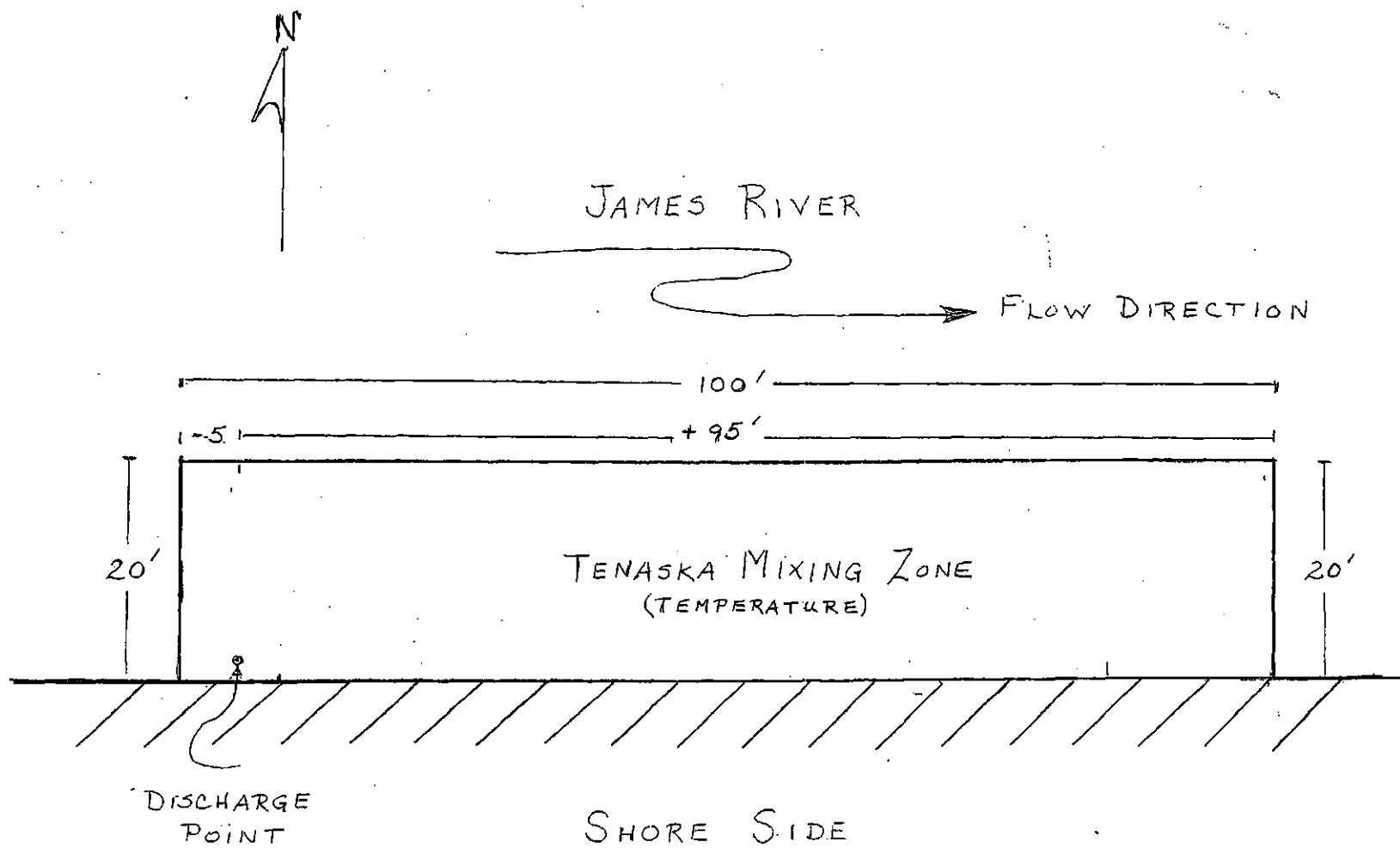
C = Composite = A 24-hour composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period.

SC = Special Composite = samples for base/neutral/acid compounds, PCBs, and pesticides must be collected as 4 individual grab samples taken proportional to flow at 6-hour intervals over the course of one day. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period. Grab samples must be analyzed separately and the concentrations averaged. Alternately, grab samples may be collected in the field and composited in the laboratory if the compositing procedure produces results equivalent to results produced by arithmetic averaging of the results of analysis of individual grab samples.

- (3) A specific analytical method is not specified; however a target value for each metal has been established. An appropriate method to meet the target value shall be selected from the following list of EPA methods (or any approved method presented in 40 CFR Part 136). If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

<u>Metal</u>	<u>Analytical Method</u>
Antimony	1638; 1639
Arsenic	206.5; 1632
Chromium ⁽⁹⁾	1639
Chromium VI	218.6; 1639
Copper	1638; 1640
Lead	1637; 1638; 1640
Mercury	245.7; 1631
Nickel	1638; 1639; 1640
Selenium	1638; 1639
Silver	1638
Zinc	1638; 1639

- (4) Any approved method presented in 40 CFR Part 136.
- (5) The QL is at the discretion of the permittee. For any substances addressed in 40 CFR Part 136, the permittee shall use one of the approved methods in 40 CFR Part 136.
- (6) Testing for phenol requires continuous extraction.
- (7) Analytical Methods: NBSR 85-3295 or DEQ's approved analysis for Tributyltin may also be used [See A Manual for the Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996].
- (8) Both Chromium III and Chromium VI may be measured by the total chromium analysis. If the result of the total chromium analysis is less than or equal to the lesser of the Chromium III or Chromium VI method QL, the results for both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].
- (9) The lab may use SW846 Method 8270D provided the lab has an Initial Demonstration of Capability, has passed a PT for Kepone, and meets the acceptance criteria for Kepone as given in Method 8270D



ATTACHMENT 7

**EFFLUENT/SLUDGE/GROUND WATER
LIMITATIONS/MONITORING
RATIONALE/SUITABLE DATA/STREAM MODELING/
ANTIDEGRADATION/ANTIBACKSLIDING**

THE EFFLUENT LIMITATIONS AND MONITORING RATIONALE ARE BASED ON THE FOLLOWING:

Background

The subject permit has been developed for a proposed 580 MW fossil fuel powered (Natural Gas with Oil Backup) steam electric generating power station. This is the 1st permit reissuance for this facility, however, due to market conditions, the prior owners, Tenaska Virginia II Partners, L.P., never initiated construction of this permitted facility. The VPDES permit has now been transferred to Dominion Virginia Power. Dominion has modified the design of the proposed power station according to their needs. Modifications to the proposed power station are summarized in application correspondence attached (Attachment 7). The original VPDES reissuance application included a proposed maximum design flow value of 0.58 MGD and an average flow value of 0.36 MGD for this outfall. After development of an initial draft permit and Fact Sheet, Dominion chose to redesign portions of the plant. This plant design revisions resulted in a change in predicted effluent characteristics and resulted in a new proposed maximum design flow value of 0.485 MGD and an average flow value of 0.366 MGD for this outfall 001. This necessitated a re-evaluation of predicted effluent pollutants for those parameters predicted to be in outfall 001 effluent. The proposed maximum design flow was used as a basis for permit limitation analysis.

Outfall 001

- FLOW** Flow is not limited. The flow monitoring frequency is continuous and the sample type is recorded. This monitoring frequency and sample type should be appropriate for assessment of this discharge.
- pH –** The limits of 6.0 SU (minimum) to 9.0 SU (maximum) are based on best professional judgment (BPJ) (protective of water quality) and are carried over from the previous permit. The monitoring frequency is set at once per day and the sample type is grab (required for pH). This monitoring frequency and sample type is carried forward with this reissuance and should provide enough data for proper assessment of compliance with the effluent limits.
- TRC -** The total residual chlorine (TRC) limits of 0.23 mg/l (monthly average) and 0.47 mg/l (daily maximum) have been recalculated with this reissuance based on the proposed changes in effluent flow. These limitations are set to insure compliance with the instream acute water quality standard [See attached TRC analysis]. The monitoring frequency is once per day and the sample type is grab (required for chlorine). This monitoring frequency and sample type should provide enough data for proper assessment of compliance with the effluent limits and water quality standards.

Temperature –

Outfall 001 discharges to a Class III segment of the James River. 9 VAC 25-260-50 of Virginia's Water Quality Standards (WQSs) sets the maximum ambient receiving water temperature at 32°C. Therefore, in order to protect the instream temperature standard, a maximum effluent temperature limitation of 32°C (BPJ) is carried forward with this reissuance. In response to comments received from DGIF, the monitoring frequency has been changed to continuous and the sample type is recorded. This frequency and sample type should provide enough data for proper assessment of compliance with the effluent limit.

WATER QUALITY BASED EFFLUENT LIMITATION ANALYSIS

In accordance with agency procedure, all predicted effluent toxic pollutants submitted with the reissuance application were evaluated for the need for limitation. No limitations were determined necessary based on these predicted data. The permit requires effluent characterization once the discharge commences. Actual data will be evaluated once submitted.

Outfall 101 (Low Volume Waste Sources)

- FLOW** Although not limited, the flow of this proposed internal outfall will be estimated during this permit term. The monitoring frequency is set at once per month and the sample type is estimate.

TSS and Oil & Grease

Federal Effluent Guidelines 40 CFR §423.15 for the Steam Electric Power Generating Point Source Category require concentration-based limitations for these parameters as listed below. These limitations are included in the permit.

PARAMETER	MONTHLY AVERAGE	DAILY MAXIMUM
TSS	30 mg/l	100 mg/l
Oil & Grease	15 mg/l	20 mg/l

TSS Mass limitations are not being applied at this internal outfall, at this time, based on 40 CFR §423.15(m).

TSS and Oil & Grease monitoring frequency is set at once per month and the sample type is grab. This frequency and sample type should provide enough data for proper assessment of compliance with the effluent limits.

Outfall 102 (Cooling tower blowdown)

FLOW Although not limited, the flow of this proposed internal outfall will be estimated during this permit term. The monitoring frequency is set at once per month and the sample type is estimate.

Free Available Chlorine, 126 Priority Pollutants, Total Chromium, and Total Zinc:

Federal Effluent Guidelines 40 CFR §423.15 for the Steam Electric Power Generating Point Source Category require concentration-based limitations for these parameters as listed below.

PARAMETER	MONTHLY AVERAGE	DAILY MAXIMUM
Free Available Chlorine	0.2 mg/l	0.5 mg/l
Total Chromium	0.2 mg/l	0.2 mg/l
Total Zinc	1.0 mg/l	1.0 mg/l
126 Priority Pollutants	Non-detect	Non-detect

Mass limitations are not being applied for the above parameters based on 40 CFR §423.15(m).

The monitoring frequency for Free Available Chlorine, Total Chromium, and Total Zinc is set at once per month and the sample type is grab. This frequency and sample type should provide enough data for proper assessment of compliance with the effluent limits.

The monitoring frequency for the 126 Priority Pollutant is set at once per month. In accordance with 40 CFR §423.15(j)(3) the permittee has the option to demonstrate that outfall 102 effluent does not contain any of the 126 priority pollutants at levels detectable by the analytical methods in 40 CFR part 136. Part I.B.11. of this permit requires this demonstration to be re-determined and resubmitted to DEQ when changes to chemical additives are proposed.

Outfalls 002 (Stormwater discharge associated with Industrial activity)

Note: *Outfall 002 was relocated with this reissuance, based on the reconfiguration of the proposed plant by the new owner (Dominion). This reconfiguration eliminated the previously permitted outfall 003.*

FLOW There is no limit on flow from this storm dependent outfall. The flow is estimated in MG. The monitoring frequency is once per year. This monitoring frequency and sample type should be appropriate for assessment of potential discharge impacts.

pH – The limits of 6.0 to 9.0 standard units are water quality-based limits. The discharge comprises a large portion of the receiving stream (7Q10 = zero); therefore, these limits will ensure compliance with water quality standards. The monitoring frequency is set 1/year and the sample type is grab (required for pH). This sample type and monitoring frequency should be adequate for assessment of potential stormwater impacts.

T. Recoverable Iron

There are **no limits** for this parameter, only monitoring. This is a best professional judgment determination based on facility operations. In addition, DEQ's VPDES general permit for storm water associated with industrial activity (Sector O – Steam Electric Generating Facilities) includes monitoring for total recoverable iron with a cutoff concentration of 1.0 mg/l. In that regard, this pollutant will be used for assessment of storm water BMPs. The SWPPP required by Part I.D. of the permit is designed to reduce pollutants in storm water runoff. Pollutant specific monitoring results above the general permit cutoff concentration would not indicate unacceptable values; however, they would justify the need to reexamine the effectiveness of the SWPPP and any best management practices (BMPs) being utilized. The goal of the SWPPP is to reduce pollutants to the maximum extent practicable. The monitoring frequency is once per year. This monitoring frequency and sample type should be appropriate for assessment of potential discharge impacts.

TPH There are **no limits** for this parameter, only monitoring. This is a best professional judgment determination based on facility operations which include bulk transfer and storage of petroleum (as a back-up power station fuel source) in areas that drain to this outfall. Petroleum products are also utilized in many applications in the proposed industrial operation. The initial monitoring frequency is once per year and the sample type is grab. This monitoring frequency and sample type should be adequate for assessment of potential storm water impacts and the effectiveness of the facility's SWPPP.

TSS There are **no limits** for this parameter, only monitoring. This is a best professional judgment determination based on facility operations. DEQ's VPDES general permit for storm water associated with industrial activity (Sector O – Steam Electric Generating Facilities) does not include monitoring for TSS; however, many other industrial categories require the monitoring of this pollutant. In addition, a cutoff concentration of 100 mg/l is typical. In that regard, this pollutant will be used for assessment of storm water BMPs. The SWPPP required by Part I.D. of the permit is designed to reduce pollutants in storm water runoff. Pollutant specific monitoring results above the general permit cutoff concentration would not indicate unacceptable values; however, they would justify the need to reexamine the effectiveness of the SWPPP and any best management practices (BMPs) being utilized. The goal of the SWPPP is to reduce pollutants to the maximum extent practicable. The monitoring frequency is once per year and the sample type is grab. This monitoring frequency and sample type should be adequate for assessment of potential storm water impacts and the effectiveness of the facility's SWPPP.

Mixing Zone Predictions for

Dominion Bear Garden

Effluent Flow = 0.485 MGD
Stream 7Q10 = 240.11 MGD
Stream 30Q10 = 336.11 MGD
Stream 1Q10 = 183.63 MGD
Stream slope = 0.0004 ft/ft
Stream width = 210 ft
Bottom scale = 2
Channel scale = 1

NEW "REVISED" effluent flow

Mixing Zone Predictions @ 7Q10

Depth = 2.5753 ft
Length = 25899.4 ft
Velocity = .6887 ft/sec
Residence Time = .4353 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = 3.1569 ft
Length = 21778.98 ft
Velocity = .7859 ft/sec
Residence Time = .3207 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = 2.1902 ft
Length = 29713.11 ft
Velocity = .6196 ft/sec
Residence Time = 13.3199 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 7.51% of the 1Q10 is used.

*NOTE: same as previous
mix w/ 7 flow.*

Dominion Bear Garden Generating Station - Predicted Effluent Temperatures (°C)

Month	Effluent Temperature
January	7.98
February	9.46
March	13.79
April	19.21
May	23.41
June	27.58
July	29.67
August	28.99
September	25.44
October	19.39
November	14.82
December	9.67

90th % Annual =	28.849
90th% Wet Season =	21.31

Wet season is December - May

December	9.67
January	7.98
February	9.46
March	13.79
April	19.21
May	23.41

Revised per plant design changes

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Dominion Bear Garden Generating Station

Permit No.: VA0090891

Receiving Stream: James River (Middle)

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	51.3 mg/L
90% Temperature (Annual) =	26.55 deg C
90% Temperature (Wet season) =	17.71 deg C
90% Maximum pH =	8.235 SU
10% Maximum pH =	7 SU
Tier Designation (1 or 2) =	2
Public Water Supply (PWS) Y/N? =	y
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	183.63 MGD
7Q10 (Annual) =	240.11 MGD
30Q10 (Annual) =	335.11 MGD
1Q10 (Wet season) =	618.89 MGD
30Q10 (Wet season) =	1026.5 MGD
30Q5 =	404.42 MGD
Harmonic Mean =	1392.8 MGD
Annual Average =	NA MGD

Mixing Information

Annual - 1Q10 Mix =	7.51 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	22.67 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	464 mg/L
90% Temp (Annual) =	28.849 deg C
90% Temp (Wet season) =	21.31 deg C
90% Maximum pH =	8.8 SU
10% Maximum pH =	6.3 SU
Discharge Flow =	0.485 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	1.2E+03	2.7E+03	--	--	1.0E+08	2.3E+08	--	--	1.2E+02	2.7E+02	--	--	1.0E+05	2.3E+05	--	--	1.0E+05	2.3E+05
Acrolein	0	--	--	3.2E+02	7.6E+02	--	--	2.7E+05	6.5E+05	--	--	3.2E+01	7.6E+01	--	--	2.7E+04	6.5E+04	--	--	2.7E+04	6.5E+04
Acrylonitrile ^c	0	--	--	5.9E-01	5.6E+00	--	--	1.7E+03	1.9E+04	--	--	5.9E-02	5.6E-01	--	--	1.7E+02	1.9E+03	--	--	1.7E+02	1.9E+03
Aldrin ^c	0	3.0E+00	--	1.3E-03	1.4E-03	8.8E+01	--	3.7E+00	4.0E+00	7.5E-01	--	1.3E-04	1.4E-04	2.8E+02	--	3.7E-01	4.0E-01	8.8E+01	--	3.7E-01	4.0E-01
Ammonia-N (mg/l) (Yearly)	0	5.24E+00	7.75E-01	--	--	1.5E+02	5.4E+02	--	--	1.34E+00	1.84E-01	--	--	5.1E+02	1.3E+02	--	--	1.5E+02	1.3E+02	--	--
Ammonia-N (mg/l) (High Flow)	0	5.34E+00	1.38E+00	--	--	1.5E+03	2.9E+03	--	--	1.34E+00	3.45E-01	--	--	1.7E+03	7.3E+02	--	--	1.5E+03	7.3E+02	--	--
Anthracene	0	--	--	9.6E+03	1.1E+05	--	--	8.0E+06	9.2E+07	--	--	9.6E+02	1.1E+04	--	--	8.0E+05	9.2E+06	--	--	8.0E+05	9.2E+06
Antimony	0	--	--	1.4E+01	4.3E+03	--	--	1.2E+04	3.6E+06	--	--	1.4E+00	4.3E+02	--	--	1.2E+03	3.6E+05	--	--	1.2E+03	3.6E+05
Arsenic	0.26	3.4E+02	1.5E+02	1.0E+01	--	1.0E+04	7.4E+04	8.1E+03	--	8.5E+01	3.8E+01	1.2E+00	--	3.2E+04	1.9E+04	8.1E+02	--	1.0E+04	1.9E+04	8.1E+02	--
Barium	0	--	--	2.0E+03	--	--	--	1.7E+06	--	--	--	2.0E+02	--	--	--	1.7E+05	--	--	--	1.7E+05	--
Benzene ^c	0	--	--	1.2E+01	7.1E+02	--	--	3.4E+04	2.0E+06	--	--	1.2E+00	7.1E+01	--	--	3.4E+03	2.0E+05	--	--	3.4E+03	2.0E+05
Benzidine ^c	0	--	--	1.2E-03	5.4E-03	--	--	3.4E+00	1.6E+01	--	--	1.2E-04	5.4E-04	--	--	3.4E-01	1.6E+00	--	--	3.4E-01	1.6E+00
Benzo (a) anthracene ^c	0	--	--	4.4E-02	4.9E-01	--	--	1.3E+02	1.4E+03	--	--	4.4E-03	4.9E-02	--	--	1.3E+01	1.4E+02	--	--	1.3E+01	1.4E+02
Benzo (b) fluoranthene ^c	0	--	--	4.4E-02	4.9E-01	--	--	1.3E+02	1.4E+03	--	--	4.4E-03	4.9E-02	--	--	1.3E+01	1.4E+02	--	--	1.3E+01	1.4E+02
Benzo (k) fluoranthene ^c	0	--	--	4.4E-02	4.9E-01	--	--	1.3E+02	1.4E+03	--	--	4.4E-03	4.9E-02	--	--	1.3E+01	1.4E+02	--	--	1.3E+01	1.4E+02
Benzo (a) pyrene ^c	0	--	--	4.4E-02	4.9E-01	--	--	1.3E+02	1.4E+03	--	--	4.4E-03	4.9E-02	--	--	1.3E+01	1.4E+02	--	--	1.3E+01	1.4E+02
Bis(2-Chloroethyl) Ether	0	--	--	3.1E-01	1.4E+01	--	--	2.6E+02	1.2E+04	--	--	3.1E-02	1.4E+00	--	--	2.6E+01	1.2E+03	--	--	2.6E+01	1.2E+03
Bis(2-Chloroisopropyl) Ether	0	--	--	1.4E+03	1.7E+05	--	--	1.2E+06	1.4E+08	--	--	1.4E+02	1.7E+04	--	--	1.2E+05	1.4E+07	--	--	1.2E+05	1.4E+07
Bromoform ^c	0	--	--	4.4E+01	3.6E+03	--	--	1.3E+05	1.0E+07	--	--	4.4E+00	3.6E+02	--	--	1.3E+04	1.0E+06	--	--	1.3E+04	1.0E+06
Butylbenzylphthalate	0	--	--	3.0E+03	5.2E+03	--	--	2.5E+06	4.3E+06	--	--	3.0E+02	5.2E+02	--	--	2.5E+05	4.3E+05	--	--	2.5E+05	4.3E+05
Cadmium	0	2.8E+00	7.8E-01	5.0E+00	--	8.3E+01	3.9E+02	4.2E+03	--	5.8E-01	2.0E-01	5.0E-01	--	2.2E+02	9.7E+01	4.2E+02	--	8.3E+01	9.7E+01	4.2E+02	--
Carbon Tetrachloride ^c	0	--	--	2.5E+00	4.4E+01	--	--	7.2E+03	1.3E+05	--	--	2.5E-01	4.4E+00	--	--	7.2E+02	1.3E+04	--	--	7.2E+02	1.3E+04
Chlordane ^c	0	2.4E+00	4.3E-03	2.1E-02	2.2E-02	7.1E+01	2.1E+00	8.0E+01	6.3E+01	5.0E-01	1.1E-03	2.1E-03	2.2E-03	2.3E+02	5.3E-01	6.0E+00	6.3E+00	7.1E+01	5.3E-01	6.0E+00	6.3E+00
Chloride	8964	8.6E+05	2.3E+05	2.5E+05	--	2.5E+07	1.1E+08	2.0E+08	--	2.2E+05	6.4E+04	3.3E+04	--	8.1E+07	2.7E+07	2.0E+07	--	2.5E+07	2.7E+07	2.0E+07	--
TRC	0	1.9E+01	1.1E+01	--	--	5.6E+02	5.5E+03	--	--	4.8E+00	2.8E+00	--	--	1.8E+03	1.4E+03	--	--	5.6E+02	1.4E+03	--	--
Chlorobenzene	0	--	--	6.8E+02	2.1E+04	--	--	5.7E+05	1.8E+07	--	--	6.8E+01	2.1E+03	--	--	5.7E+04	1.8E+06	--	--	5.7E+04	1.8E+06

Parameter (ug/L unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chloroform (methylene ²)	0	-	-	4.1E+00	3.4E+02	-	-	1.2E+04	9.6E+05	-	-	4.1E+01	3.4E+01	-	-	1.2E+03	9.6E+04	-	-	1.2E+03	9.6E+04
Chloroform ²	0	-	-	3.5E+02	2.9E+04	-	-	1.0E+06	8.1E+07	-	-	3.5E+01	2.9E+03	-	-	1.0E+06	8.1E+08	-	-	1.0E+06	8.1E+08
2-Chloronaphthalene	0	-	-	1.7E+03	4.3E+03	-	-	1.4E+06	3.0E+06	-	-	1.7E+02	4.3E+02	-	-	1.4E+06	3.0E+05	-	-	1.4E+06	3.0E+05
2-Chlorophenol	0	-	-	1.2E+02	4.0E+02	-	-	1.0E+05	3.1E+05	-	-	1.2E+01	4.0E+01	-	-	1.0E+04	3.3E+04	-	-	1.0E+04	3.3E+04
Chloroform	0	8.3E+02	4.1E+02	-	-	2.4E+00	2.1E+01	-	-	2.1E+02	1.0E+02	-	-	7.9E+00	5.1E+00	-	-	2.4E+00	6.1E+00	-	-
Chromium III	0	4.5E+02	5.0E+01	-	-	1.3E+04	2.3E+04	-	-	9.7E+01	1.3E+01	-	-	3.7E+04	6.2E+03	-	-	1.3E+04	6.2E+03	-	-
Chromium VI	0	1.6E+01	1.1E+01	-	-	4.7E+02	5.1E+02	-	-	4.0E+00	2.9E+00	-	-	1.5E+03	1.4E+03	-	-	4.7E+02	1.4E+03	-	-
Chromium Total	0	-	-	1.0E+04	-	-	-	3.3E+04	-	-	-	1.0E+01	-	-	-	9.3E+03	-	-	-	8.3E+03	-
Chrysene ²	0	-	-	4.4E+02	4.9E+01	-	-	1.3E+02	1.4E+03	-	-	4.4E+03	4.9E+02	-	-	1.3E+01	1.4E+02	-	-	1.3E+01	1.4E+02
Coccol	0.5	1.0E+01	6.0E+00	1.3E+02	-	2.9E+02	2.7E+03	1.1E+05	-	2.5E+00	1.9E+00	1.3E+02	-	7.7E+02	6.8E+02	1.1E+05	-	2.9E+02	6.8E+02	1.1E+05	-
Cyanoide	0	2.2E+01	5.2E+00	7.0E+02	2.2E+05	5.1E+02	2.6E+02	5.9E+05	1.8E+08	5.5E+00	1.3E+00	7.0E+03	2.2E+04	2.1E+03	6.4E+02	5.8E+04	1.8E+07	6.6E+02	6.4E+02	5.8E+04	1.8E+07
DDD ²	0	-	-	8.0E+03	8.4E+03	-	-	2.4E+01	2.4E+01	-	-	8.0E+04	8.4E+04	-	-	2.4E+00	2.4E+00	-	-	2.4E+00	2.4E+00
DDE ²	0	-	-	5.9E+03	5.9E+03	-	-	1.7E+01	1.7E+01	-	-	5.9E+04	5.9E+04	-	-	1.7E+00	1.7E+00	-	-	1.7E+00	1.7E+00
DDT ²	0	1.1E+00	1.0E+00	5.9E+03	5.9E+03	3.2E+01	3.0E+01	1.7E+01	1.7E+01	2.8E+01	2.5E+04	5.9E+04	5.9E+04	1.0E+02	1.2E+01	1.7E+00	1.7E+00	3.2E+01	1.2E+01	1.7E+00	1.7E+00
Demeton	0	-	1.0E+01	-	-	-	5.0E+01	-	-	-	2.5E+02	-	-	-	1.2E+01	-	-	-	1.2E+01	-	-
Dibenz(a,h)anthracene ²	0	-	-	4.4E+02	4.9E+01	-	-	1.3E+02	1.4E+03	-	-	4.4E+03	4.9E+02	-	-	1.3E+01	1.4E+02	-	-	1.3E+01	1.4E+02
Dibutyl phthalate	0	-	-	2.7E+03	1.2E+04	-	-	2.3E+06	1.0E+07	-	-	2.7E+02	1.2E+03	-	-	2.3E+06	1.0E+06	-	-	2.3E+06	1.0E+06
Dichloromethane (Methylene Chloride) ²	0	-	-	4.7E+01	1.6E+04	-	-	1.4E+06	4.6E+07	-	-	4.7E+00	1.6E+03	-	-	1.4E+04	4.6E+06	-	-	1.4E+04	4.6E+06
1,2-Dichlorobenzene	0	-	-	2.7E+03	1.7E+04	-	-	2.3E+06	1.4E+07	-	-	2.7E+02	1.7E+03	-	-	2.3E+06	1.4E+06	-	-	2.3E+06	1.4E+06
1,3-Dichlorobenzene	0	-	-	4.0E+02	2.6E+03	-	-	3.3E+05	2.2E+06	-	-	4.0E+01	2.6E+02	-	-	3.3E+04	2.2E+06	-	-	3.3E+04	2.2E+06
1,4-Dichlorobenzene	0	-	-	4.0E+02	2.6E+03	-	-	3.3E+05	2.2E+06	-	-	4.0E+01	2.6E+02	-	-	3.3E+04	2.2E+06	-	-	3.3E+04	2.2E+06
3,3-Dichlorobenzidine ²	0	-	-	4.0E+01	7.7E+01	-	-	1.1E+03	2.2E+03	-	-	4.0E+02	7.7E+02	-	-	1.1E+02	2.2E+02	-	-	1.1E+02	2.2E+02
Dichlorobromomethane ²	0	-	-	5.6E+00	4.6E+02	-	-	1.6E+04	1.3E+06	-	-	5.6E+01	4.6E+01	-	-	1.6E+03	1.3E+05	-	-	1.6E+03	1.3E+05
1,2-Dichloroethane ²	0	-	-	3.8E+00	9.9E+02	-	-	1.1E+04	2.8E+06	-	-	3.8E+01	9.9E+01	-	-	1.1E+03	2.8E+05	-	-	1.1E+03	2.8E+05
1,1-Dichloroethylene	0	-	-	3.1E+02	1.7E+04	-	-	2.6E+06	1.4E+07	-	-	3.1E+01	1.7E+03	-	-	2.6E+04	1.4E+06	-	-	2.6E+04	1.4E+06
1,2-trans-dichloroethylene	0	-	-	7.0E+02	1.4E+05	-	-	5.8E+06	1.2E+08	-	-	7.0E+01	1.4E+04	-	-	5.8E+04	1.2E+07	-	-	5.8E+04	1.2E+07
2,4-Dichlorophenol	0	-	-	9.3E+01	7.9E+02	-	-	2.8E+04	6.5E+05	-	-	9.3E+00	7.9E+01	-	-	7.8E+03	6.9E+04	-	-	7.8E+03	6.9E+04
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	-	-	1.0E+02	-	-	-	5.2E+04	-	-	-	1.0E+01	-	-	-	8.3E+03	-	-	-	8.3E+03	-
1,2-Dichloropropane ²	0	-	-	5.2E+00	3.9E+02	-	-	1.5E+04	1.1E+06	-	-	5.2E+01	3.9E+01	-	-	1.5E+03	1.1E+05	-	-	1.5E+03	1.1E+05
1,3-Dichloropropane	0	-	-	1.0E+01	1.7E+03	-	-	8.2E+03	1.4E+06	-	-	1.0E+00	1.7E+02	-	-	8.3E+02	1.4E+05	-	-	8.3E+02	1.4E+05
Diuron ²	0	2.4E+01	5.6E+02	1.4E+03	1.4E+01	1.1E+00	2.9E+01	4.0E+00	4.3E+00	6.0E+02	1.4E+02	1.4E+04	1.4E+04	2.3E+01	6.9E+00	4.0E+01	4.0E+01	7.1E+00	6.9E+00	4.0E+01	4.0E+01
Dimethyl Phthalate	0	-	-	2.0E+04	1.2E+05	-	-	1.5E+07	1.2E+08	-	-	2.0E+03	1.2E+04	-	-	1.9E+06	1.2E+07	-	-	1.9E+06	1.2E+07
Di-n-Ethylhexyl Phthalate ²	0	-	-	1.8E+01	5.9E+01	-	-	5.2E+04	1.7E+05	-	-	1.8E+00	5.9E+00	-	-	5.2E+03	1.7E+04	-	-	5.2E+03	1.7E+04
2,4-Dimethylphenol	0	-	-	5.4E+02	2.2E+03	-	-	4.5E+06	1.9E+06	-	-	5.4E+01	2.3E+02	-	-	4.5E+04	1.9E+05	-	-	4.5E+04	1.9E+05
Dimethyl Phthalate	0	-	-	3.1E+05	2.6E+06	-	-	2.6E+08	2.4E+09	-	-	3.1E+04	2.3E+05	-	-	2.5E+07	2.4E+08	-	-	2.6E+07	2.4E+08
Di-n-Butyl Phthalate	0	-	-	2.7E+03	1.2E+04	-	-	2.3E+06	1.0E+07	-	-	2.7E+02	1.2E+03	-	-	2.3E+06	1.0E+06	-	-	2.3E+06	1.0E+06
2,4-Dinitrophenol	0	-	-	1.0E+01	1.4E+04	-	-	5.8E+04	1.2E+07	-	-	7.0E+00	1.4E+03	-	-	5.8E+03	1.2E+06	-	-	5.8E+03	1.2E+06
2-Methyl-6-Tert-butylphenol	0	-	-	1.3E+01	6.5E+02	-	-	1.1E+04	6.4E+05	-	-	1.3E+00	7.7E+01	-	-	1.1E+03	6.4E+04	-	-	1.1E+03	6.4E+04
2,4-Dinitrophenyl iodide (2,4,6-Tri- nitrochlorobenzene-p-dimethyl- iodide)	0	-	-	1.0E+03	9.1E+01	-	-	3.2E+03	1.5E+05	-	-	1.1E+01	9.1E+00	-	-	1.2E+02	2.8E+04	-	-	3.2E+02	2.8E+04
1,3-Diphenylhydrazine	0	-	-	1.2E+06	1.2E+06	-	-	1.2E+06	1.2E+06	-	-	1.2E+06	1.2E+06	-	-	1.2E+06	1.2E+06	-	-	1.2E+06	1.2E+06
Alpha Endosulfan	0	1.2E+01	5.4E+02	1.1E+02	2.4E+02	6.5E+00	1.8E+01	9.1E+04	1.0E+05	5.5E+02	1.4E+02	1.1E+01	2.4E+01	2.1E+01	6.9E+00	9.2E+03	2.0E+04	6.6E+00	6.9E+00	9.2E+03	2.0E+04
Beta Endosulfan	0	1.2E+01	5.6E+02	1.1E+02	2.4E+02	6.5E+00	1.8E+01	9.2E+04	1.0E+05	5.5E+02	1.4E+02	1.1E+01	2.4E+01	2.1E+01	6.9E+00	9.2E+03	2.0E+04	6.6E+00	6.9E+00	9.2E+03	2.0E+04
Endosulfan Sulfate	0	-	-	1.1E+02	2.4E+02	-	-	9.1E+04	2.0E+05	-	-	1.1E+01	2.4E+01	-	-	9.2E+03	2.0E+04	-	-	9.2E+03	2.0E+04
Endrin	0	8.6E+02	2.4E+02	7.6E+01	6.1E+01	2.5E+00	1.8E+01	8.3E+02	8.8E+02	2.2E+02	6.0E+03	7.6E+02	8.1E+02	8.2E+00	4.5E+00	6.3E+01	6.8E+01	2.6E+00	4.5E+00	6.3E+01	6.8E+01
Endrin Aldehyde	0	-	-	7.4E+01	6.1E+01	-	-	6.2E+02	6.8E+02	-	-	7.6E+02	8.1E+02	-	-	6.3E+01	6.8E+01	-	-	6.3E+01	6.8E+01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	3.1E+03	2.9E+04	--	--	2.6E+06	2.4E+07	--	--	3.1E+02	2.9E+03	--	--	2.6E+05	2.4E+06	--	--	2.6E+05	2.4E+06
Fluoranthene	0	--	--	3.0E+02	3.7E+02	--	--	2.5E+05	3.1E+05	--	--	3.0E+01	3.7E+01	--	--	2.5E+04	3.1E+04	--	--	2.5E+04	3.1E+04
Fluorene	0	--	--	1.3E+03	1.4E+04	--	--	1.1E+06	1.2E+07	--	--	1.3E+02	1.4E+03	--	--	1.1E+05	1.2E+06	--	--	1.1E+05	1.2E+06
Foaming Agents	0	--	--	5.0E+02	--	--	--	4.2E+05	--	--	--	5.0E+01	--	--	--	4.2E+04	--	--	--	4.2E+04	--
Guthion	0	--	1.0E-02	--	--	--	5.0E+00	--	--	--	2.5E-03	--	--	--	1.2E+00	--	--	--	1.2E+00	--	--
Heptachlor ^C	0	5.2E-01	3.8E-03	2.1E-03	2.1E-03	1.5E+01	1.9E+00	6.0E+00	6.0E+00	1.3E-01	9.5E-04	2.1E-04	2.1E-04	4.9E+01	4.7E-01	6.0E-01	6.0E-01	1.5E+01	4.7E-01	6.0E-01	6.0E-01
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	1.0E-03	1.1E-03	1.5E+01	1.9E+00	2.9E+00	3.2E+00	1.3E-01	9.5E-04	1.0E-04	1.1E-04	4.9E+01	4.7E-01	2.9E-01	3.2E-01	1.5E+01	4.7E-01	2.9E-01	3.2E-01
Hexachlorobenzene ^C	0	--	--	7.5E-03	7.7E-03	--	--	2.2E+01	2.2E+01	--	--	7.5E-04	7.7E-04	--	--	2.2E+00	2.2E+00	--	--	2.2E+00	2.2E+00
Hexachlorobutadiene ^C	0	--	--	4.4E+00	5.0E+02	--	--	1.3E+04	1.4E+06	--	--	4.4E-01	5.0E+01	--	--	1.3E+03	1.4E+05	--	--	1.3E+03	1.4E+05
Hexachlorocyclohexane Alpha-BHC ^C	0	--	--	3.9E-02	1.3E-01	--	--	1.1E+02	3.7E+02	--	--	3.9E-03	1.3E-02	--	--	1.1E+01	3.7E+01	--	--	1.1E+01	3.7E+01
Hexachlorocyclohexane Beta-BHC ^C	0	--	--	1.4E-01	4.6E-01	--	--	4.0E+02	1.3E+03	--	--	1.4E-02	4.6E-02	--	--	4.0E+01	1.3E+02	--	--	4.0E+01	1.3E+02
Hexachlorocyclohexane Gamma-BHC ^C (Lindane)	0	9.5E-01	--	1.9E-01	6.3E-01	2.8E+01	--	5.5E+02	1.8E+03	2.4E-01	--	1.9E-02	6.3E-02	9.0E+01	--	5.5E+01	1.8E+02	2.8E+01	--	5.5E+01	1.8E+02
Hexachlorocyclopentadiene	0	--	--	2.4E+02	1.7E+04	--	--	2.0E+05	1.4E+07	--	--	2.4E+01	1.7E+03	--	--	2.0E+04	1.4E+06	--	--	2.0E+04	1.4E+06
Hexachloroethane ^C	0	--	--	1.9E+01	8.9E+01	--	--	5.5E+04	2.6E+05	--	--	1.9E+00	8.9E+00	--	--	5.5E+03	2.6E+04	--	--	5.5E+03	2.6E+04
Hydrogen Sulfide	0	--	2.0E+00	--	--	--	9.9E+02	--	--	--	5.0E-01	--	--	--	2.5E+02	--	--	--	2.5E+02	--	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	4.4E-02	4.9E-01	--	--	1.3E+02	1.4E+03	--	--	4.4E-03	4.9E-02	--	--	1.3E+01	1.4E+02	--	--	1.3E+01	1.4E+02
Iron	0	--	--	3.0E+02	--	--	--	2.5E+05	--	--	--	3.0E+01	--	--	--	2.5E+04	--	--	--	2.5E+04	--
Isophorone ^C	0	--	--	3.6E+02	2.6E+04	--	--	1.0E+06	7.5E+07	--	--	3.6E+01	2.6E+03	--	--	1.0E+05	7.5E+06	--	--	1.0E+05	7.5E+06
Kepon	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--
Lead	0	8.2E+01	7.4E+00	1.5E+01	--	2.4E+03	3.7E+03	1.3E+04	--	1.6E+01	1.8E+00	1.5E+00	--	6.2E+03	9.1E+02	1.3E+03	--	2.4E+03	9.1E+02	1.3E+03	--
Malathion	0	--	1.0E-01	--	--	--	5.0E+01	--	--	--	2.5E-02	--	--	--	1.2E+01	--	--	--	1.2E+01	--	--
Manganese	8.86	--	--	5.0E+01	--	--	--	3.4E+04	--	--	--	1.3E+01	--	--	--	3.4E+03	--	--	--	3.4E+03	--
Mercury	0	1.4E+00	7.7E-01	5.0E-02	5.1E-02	4.1E+01	3.8E+02	4.2E+01	4.3E+01	3.5E-01	1.9E-01	5.0E-03	5.1E-03	1.3E+02	9.5E+01	4.2E+00	4.3E+00	4.1E+01	9.5E+01	4.2E+00	4.3E+00
Methyl Bromide	0	--	--	4.8E+01	4.0E+03	--	--	4.0E+04	3.3E+06	--	--	4.8E+00	4.0E+02	--	--	4.0E+03	3.3E+05	--	--	4.0E+03	3.3E+05
Methoxychlor	0	--	3.0E-02	1.0E+02	--	--	1.5E+01	8.3E+04	--	--	7.5E-03	1.0E+01	--	--	3.7E+00	8.3E+03	--	--	3.7E+00	8.3E+03	--
Mirex	0	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--	--	0.0E+00	--	--
Monochlorobenzene	0	--	--	6.8E+02	2.1E+04	--	--	5.7E+05	1.8E+07	--	--	6.8E+01	2.1E+03	--	--	5.7E+04	1.8E+06	--	--	5.7E+04	1.8E+06
Nickel	0.48	1.4E+02	1.4E+01	6.1E+02	4.6E+03	4.2E+03	6.5E+03	5.1E+05	3.8E+06	3.1E+01	3.7E+00	6.1E+01	4.6E+02	1.2E+04	1.6E+03	5.1E+04	3.8E+05	4.2E+03	1.6E+03	5.1E+04	3.8E+05
Nitrate (as N)	0	--	--	1.0E+04	--	--	--	8.3E+06	--	--	--	1.0E+03	--	--	--	8.3E+05	--	--	--	8.3E+05	--
Nitrobenzene	0	--	--	1.7E+01	1.9E+03	--	--	1.4E+04	1.6E+06	--	--	1.7E+00	1.9E+02	--	--	1.4E+03	1.6E+05	--	--	1.4E+03	1.6E+05
N-Nitrosodimethylamine ^C	0	--	--	6.9E-03	8.1E+01	--	--	2.0E+01	2.3E+05	--	--	6.9E-04	8.1E+00	--	--	2.0E+00	2.3E+04	--	--	2.0E+00	2.3E+04
N-Nitrosodiphenylamine ^C	0	--	--	5.0E+01	1.6E+02	--	--	1.4E+05	4.6E+05	--	--	5.0E+00	1.6E+01	--	--	1.4E+04	4.6E+04	--	--	1.4E+04	4.6E+04
N-Nitrosodi-n-propylamine ^C	0	--	--	5.0E-02	1.4E+01	--	--	1.4E+02	4.0E+04	--	--	5.0E-03	1.4E+00	--	--	1.4E+01	4.0E+03	--	--	1.4E+01	4.0E+03
Parathion	0	6.5E-02	1.3E-02	--	--	1.9E+00	6.4E+00	--	--	1.6E-02	3.3E-03	--	--	6.2E+00	1.6E+00	--	--	1.9E+00	1.6E+00	--	--
PCB-1016	0	--	1.4E-02	--	--	--	6.9E+00	--	--	--	3.5E-03	--	--	--	1.7E+00	--	--	--	1.7E+00	--	--
PCB-1221	0	--	1.4E-02	--	--	--	6.9E+00	--	--	--	3.5E-03	--	--	--	1.7E+00	--	--	--	1.7E+00	--	--
PCB-1232	0	--	1.4E-02	--	--	--	6.9E+00	--	--	--	3.5E-03	--	--	--	1.7E+00	--	--	--	1.7E+00	--	--
PCB-1242	0	--	1.4E-02	--	--	--	6.9E+00	--	--	--	3.5E-03	--	--	--	1.7E+00	--	--	--	1.7E+00	--	--
PCB-1248	0	--	1.4E-02	--	--	--	6.9E+00	--	--	--	3.5E-03	--	--	--	1.7E+00	--	--	--	1.7E+00	--	--
PCB-1254	0	--	1.4E-02	--	--	--	6.9E+00	--	--	--	3.5E-03	--	--	--	1.7E+00	--	--	--	1.7E+00	--	--
PCB-1260	0	--	1.4E-02	--	--	--	6.9E+00	--	--	--	3.5E-03	--	--	--	1.7E+00	--	--	--	1.7E+00	--	--
PCB Total ^C	0	--	--	1.7E-03	1.7E-03	--	--	4.9E+00	4.9E+00	--	--	1.7E-04	1.7E-04	--	--	4.9E-01	4.9E-01	--	--	4.9E-01	4.9E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^c	0	8.3E+00	6.7E+00	2.8E+00	8.2E+01	2.4E+02	3.3E+03	8.0E+03	2.4E+05	2.2E+00	1.7E+00	2.8E-01	8.2E+00	8.2E+02	8.3E+02	8.0E+02	2.4E+04	2.4E+02	8.3E+02	8.0E+02	2.4E+04
Phenol	0	--	--	2.1E+04	4.6E+06	--	--	1.8E+07	3.8E+09	--	--	2.1E+03	4.6E+05	--	--	1.8E+06	3.8E+08	--	--	1.8E+06	3.8E+08
Pyrene	0	--	--	9.6E+02	1.1E+04	--	--	8.0E+05	9.2E+06	--	--	9.6E+01	1.1E+03	--	--	8.0E+04	9.2E+05	--	--	8.0E+04	9.2E+05
Radionuclides (pCi/l except Beta/Photon)	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	1.5E+01	1.5E+01	--	--	1.3E+04	1.3E+04	--	--	1.5E+00	1.5E+00	--	--	1.3E+03	1.3E+03	--	--	1.3E+03	1.3E+03
Strontium-90	0	--	--	8.0E+00	8.0E+00	--	--	6.7E+03	6.7E+03	--	--	8.0E-01	8.0E-01	--	--	6.7E+02	6.7E+02	--	--	6.7E+02	6.7E+02
Tritium	0	--	--	2.0E+04	2.0E+04	--	--	1.7E+07	1.7E+07	--	--	2.0E+03	2.0E+03	--	--	1.7E+06	1.7E+06	--	--	1.7E+06	1.7E+06
Selenium	0	2.0E+01	5.0E+00	1.7E+02	1.1E+04	5.9E+02	2.5E+03	1.4E+05	9.2E+06	5.0E+00	1.3E+00	1.7E+01	1.1E+03	1.9E+03	6.2E+02	1.4E+04	9.2E+05	5.9E+02	6.2E+02	1.4E+04	9.2E+05
Silver	0	2.1E+00	--	--	--	6.2E+01	--	--	--	3.8E-01	--	--	--	1.5E+02	--	--	--	6.2E+01	--	--	--
Sulfate	0	--	--	2.5E+05	--	--	--	2.1E+08	--	--	--	2.5E+04	--	--	--	2.1E+07	--	--	--	2.1E+07	--
1,1,2,2-Tetrachloroethane ^c	0	--	--	1.7E+00	1.1E+02	--	--	4.9E+03	3.2E+05	--	--	1.7E-01	1.1E+01	--	--	4.9E+02	3.2E+04	--	--	4.9E+02	3.2E+04
Tetrachloroethylene ^c	0	--	--	8.0E+00	8.9E+01	--	--	2.3E+04	2.6E+05	--	--	8.0E-01	8.9E+00	--	--	2.3E+03	2.6E+04	--	--	2.3E+03	2.6E+04
Thallium	0	--	--	1.7E+00	6.3E+00	--	--	1.4E+03	5.3E+03	--	--	1.7E-01	6.3E-01	--	--	1.4E+02	5.3E+02	--	--	1.4E+02	5.3E+02
Toluene	0	--	--	8.8E+03	2.0E+05	--	--	5.7E+06	1.7E+08	--	--	8.8E+02	2.0E+04	--	--	5.7E+05	1.7E+07	--	--	5.7E+05	1.7E+07
Total dissolved solids	0	--	--	5.0E+05	--	--	--	4.2E+08	--	--	--	5.0E+04	--	--	--	4.2E+07	--	--	--	4.2E+07	--
Toxaphene ^c	0	7.3E-01	2.0E-04	7.3E-03	7.5E-03	2.1E+01	9.9E-02	2.1E+01	2.2E+01	1.8E-01	5.0E-05	7.3E-04	7.5E-04	6.9E+01	2.5E-02	2.1E+00	2.2E+00	2.1E+01	2.5E-02	2.1E+00	2.2E+00
Tributyltin	0	4.6E-01	6.3E-02	--	--	1.4E+01	3.1E+01	--	--	1.2E-01	1.6E-02	--	--	4.4E+01	7.8E+00	--	--	1.4E+01	7.8E+00	--	--
1,2,4-Trichlorobenzene	0	--	--	2.6E+02	9.4E+02	--	--	2.2E+05	7.8E+05	--	--	2.6E+01	9.4E+01	--	--	2.2E+04	7.8E+04	--	--	2.2E+04	7.8E+04
1,1,2-Trichloroethane ^c	0	--	--	6.0E+00	4.2E+02	--	--	1.7E+04	1.2E+06	--	--	6.0E-01	4.2E+01	--	--	1.7E+03	1.2E+05	--	--	1.7E+03	1.2E+05
Trichloroethylene ^c	0	--	--	2.7E+01	8.1E+02	--	--	7.8E+04	2.3E+06	--	--	2.7E+00	8.1E+01	--	--	7.8E+03	2.3E+05	--	--	7.8E+03	2.3E+05
2,4,6-Trichlorophenol ^c	0	--	--	2.1E+01	6.5E+01	--	--	6.0E+04	1.9E+05	--	--	2.1E+00	6.5E+00	--	--	6.0E+03	1.9E+04	--	--	6.0E+03	1.9E+04
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	5.0E+01	--	--	--	4.2E+04	--	--	--	5.0E+00	--	--	--	4.2E+03	--	--	--	4.2E+03	--
Vinyl Chloride ^c	0	--	--	2.3E-01	6.1E+01	--	--	6.6E+02	1.8E+05	--	--	2.3E-02	6.1E+00	--	--	6.6E+01	1.8E+04	--	--	6.6E+01	1.8E+04
Zinc	2.19	9.2E+01	7.9E+01	9.1E+03	6.9E+04	2.6E+03	3.8E+04	7.6E+06	5.8E+07	2.1E+01	2.1E+01	9.1E+02	6.9E+03	7.2E+03	9.5E+03	7.6E+05	5.8E+06	2.6E+03	9.5E+03	7.6E+05	5.8E+06

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = $(0.25(WQC - \text{background conc.}) + \text{background conc.})$ for acute and chronic
= $(0.1(WQC - \text{background conc.}) + \text{background conc.})$ for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	1.2E+03
Arsenic	8.1E+02
Barium	1.7E+05
Cadmium	3.3E+01
Chromium III	3.7E+03
Chromium VI	1.9E+02
Copper	1.1E+02
Iron	2.5E+04
Lead	5.5E+02
Manganese	3.4E+03
Mercury	4.2E+00
Nickel	9.7E+02
Selenium	2.4E+02
Silver	2.5E+01
Zinc	1.1E+03

Note: do not use QL's lower than the minimum QL's provided in agency guidance

7/29/2009 4:22:33 PM

Facility = Dominion Bear Garden 001

Chemical = Ammonia

Chronic averaging period = 30

WLAa = 150

WLAc = 130

Q.L. = 0.2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = .41

Variance = .060516

C.V. = 0.6

97th percentile daily values = .997701

97th percentile 4 day average = .682153

97th percentile 30 day average = .494481

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.41

7/29/2009 4:23:54 PM

Facility = Dominion Bear Garden 001

Chemical = TRC

Chronic averaging period = 4

WLAa = 560

WLAc = 1400

Q.L. = 100

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 1500

Variance = 810000

C.V. = 0.6

97th percentile daily values = 3650.12

97th percentile 4 day average = 2495.68

97th percentile 30 day average = 1809.07

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 560

Average Weekly limit = 560

Average Monthly Limit = 560

Current limits are protective.

The data are:

1500

7/29/2009 4:25:53 PM

Facility = Dominion Bear Garden 001

Chemical = Hg

Chronic averaging period = 4

WLAa = 41

WLAc = 95

Q.L. = 0.2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 1.9

Variance = 1.2996

C.V. = 0.6

97th percentile daily values = 4.62349

97th percentile 4 day average = 3.16120

97th percentile 30 day average = 2.29150

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

1.9

7/29/2009 4:28:14 PM

Facility = Dominion Bear Garden 001
Chemical = Dissolved Chromium (assumed Hex)
Chronic averaging period = 4
WLAa = 470
WLAc = 1400
Q.L. = 0.1
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = .95
Variance = .3249
C.V. = 0.6
97th percentile daily values = 2.31174
97th percentile 4 day average = 1.58060
97th percentile 30 day average = 1.14575
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.95

7/29/2009 4:29:56 PM

Facility = Dominion Bear Garden 001

Chemical = Zinc

Chronic averaging period = 4

WLAa = 2600

WLAc = 9500

Q.L. = 0.1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 20.9

Variance = 157.251

C.V. = 0.6

97th percentile daily values = 50.8584

97th percentile 4 day average = 34.7732

97th percentile 30 day average = 25.2065

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

20.9

7/29/2009 4:31:24 PM

Facility = Dominion Bear Garden 001

Chemical = Selenium

Chronic averaging period = 4

WLAa = 590

WLAc = 620

Q.L. = 0.5

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 4.7

Variance = 7.9524

C.V. = 0.6

97th percentile daily values = 11.4370

97th percentile 4 day average = 7.81981

97th percentile 30 day average = 5.66845

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4.7

7/29/2009 4:33:16 PM

Facility = Dominion Bear Garden 001

Chemical = Silver

Chronic averaging period = 4

WLAa = 62

WLAc =

Q.L. = 0.1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = .95

Variance = .3249

C.V. = 0.6

97th percentile daily values = 2.31174

97th percentile 4 day average = 1.58060

97th percentile 30 day average = 1.14575

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.95

7/29/2009 4:34:43 PM

Facility = Dominion Bear Garden 001

Chemical = Nickel

Chronic averaging period = 4

WLAa = 4200

WLAc = 1600

Q.L. = 0.1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 4.6

Variance = 7.6176

C.V. = 0.6

97th percentile daily values = 11.1937

97th percentile 4 day average = 7.65343

97th percentile 30 day average = 5.54784

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4.6

7/29/2009 4:36:06 PM

Facility = Dominion Bear Garden 001

Chemical = Lead

Chronic averaging period = 4

WLAa = 2400

WLAc = 910

Q.L. = 0.1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = .95

Variance = .3249

C.V. = 0.6

97th percentile daily values = 2.31174

97th percentile 4 day average = 1.58060

97th percentile 30 day average = 1.14575

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.95

7/29/2009 4:37:38 PM

Facility = Dominion Bear Garden 001

Chemical = copper

Chronic averaging period = 4

WLAa = 290

WLAc = 680

Q.L. = 0.1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 4.7

Variance = 7.9524

C.V. = 0.6

97th percentile daily values = 11.4370

97th percentile 4 day average = 7.81981

97th percentile 30 day average = 5.66845

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

4.7

7/29/2009 4:38:54 PM

Facility = Dominion Bear Garden 001

Chemical = Cadmium

Chronic averaging period = 4

WLAa = 83

WLAc = 97

Q.L. = 0.1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = .95

Variance = .3249

C.V. = 0.6

97th percentile daily values = 2.31174

97th percentile 4 day average = 1.58060

97th percentile 30 day average = 1.14575

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.95

7/29/2009 4:41:04 PM

Facility = Dominion Bear Garden 001

Chemical = Arsenic

Chronic averaging period = 4

WLAa = 10000

WLAc = 19000

Q.L. = 0.1

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = .19

Variance = .012996

C.V. = 0.6

97th percentile daily values = .462349

97th percentile 4 day average = .316120

97th percentile 30 day average = .229150

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

0.19

Final proposed changes
Pg 1 of 3

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JAN 14 2009

Memorandum

DEQ

Date: January 8, 2009
To: Kim Lanterman
From: Teresa Rodriguez
Subject: Update to VPDES permit renewal application for Bear Garden Generating Station

Distribution: Lawrence Labrie Steve Cibik Chris Wu

Dominion submitted a permit renewal application to the Virginia Department of Environmental Quality (VDEQ) on May 2008 for the proposed Bear Garden Generating Station, and while a draft permit was issued, Dominion has since made minor modifications to the facility layout. This amended permit renewal application includes a revised description for the proposed Dominion facility.

This amended permit application includes the following modifications to the application submitted in May 2008:

- The wastestreams from the cooling water blowdown and thermal cooling blowdown described as outfalls 102 and 103 in the original application will now be combined in the same basin and then discharged through one internal outfall. The proposed facility configuration will now have four established outfalls, two of which will be internal outfalls. One internal outfall will discharge both cooling tower and chiller tower blowdown and the second one will consist of effluent from the oil/water separator for the treatment of low volume wastes. The third outfall will discharge to the James River and will consist of the flows from the combined cooling tower blowdown and the oil/water separator. The fourth outfall will be a stormwater outfall to an unnamed tributary to the James River.
- The maximum design flow expected to be discharged through the combined outfall will be 0.485 MGD and an expected average flow of 0.366 MGD.
- The amended application includes revised wastewater characterizations for outfalls 102 and 001. These wastewater characterizations were based on both the number of cycles and different flow regimes. Two water balances, one capturing maximum operational discharge, the other capturing average operational discharge, served as proxy characterizations for daily average and daily maximum concentration, respectively; the two water balances also served as surrogate values for daily maximum and daily average loading, respectively. Under these assumptions, projected wastewater concentration and loading were then developed for Outfall 001 (final effluent) and Outfall 102 (combined cooling tower and chiller tower). The wastewater characterization for internal outfall 101 has not changed.
- While anticipated maximum flows are expected to decrease by almost 20% when compared to the draft permit, the CORMIX modeling report previously revised to reflect 2008 flow statistics for the James River and expected maximum and average discharge flows from the facility will

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- not be updated. The previous modeling analysis should still sufficiently verify compliance with the thermal mixing zone established in the VPDES permit under maximum design and average conditions since the effluent temperature is not expected to change.
- Attachment C includes an updated general plot plan and a site plan reflecting a modification in the proposed outfall pipeline route adjacent to the James River.

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Summary of Amendments to Bear Garden VPDES Application

Modifications 12/2008	Comments
Form 2D	<ul style="list-style-type: none"> Part I. Outfalls locations – outfall 103 was eliminated by redirecting the thermal cooling blowdown to the cooling tower basin. Part II.A. Flows, sources of pollution – the description for flows contributing to outfall 102 now includes the thermal cooling blowdown. In addition average flows were adjusted according to the revised water balance Part III.C. – with the rerouting of the thermal cooling blowdown to the cooling tower basin this stream is not a separate discharge Part V. Effluent Characteristics – the wastewater characterization for outfalls 102 and 001 was revised to reflect the comingling of 102 and 103 and adjusted flows
Form 2F	Part IV. Description of Pollutant Sources - Drainage area for the site was estimated as 9.5 acres (Water Balance 11/08).
Attachment B Water balance	<ul style="list-style-type: none"> Chiller cooling tower blowdown rerouted to the cooling tower basin Maximum flow at outfall 001 was changed to 0.485 MGD Average flow for outfall 001 was changed to 0.366 MGD
Attachment C Plant layout	General plot plan was updated. Site plan shows a modification to the route of the discharge pipeline.
Attachment D Engineering Summary	The engineering summary was updated to reflect the changes in configuration of the internal outfalls
Attachment F WW characterization report	The wastewater characterization model was updated for outfalls 102 and 001 using modified input flows from the flow diagrams.
VPDES permit application addendum (DEQ)	Updated average and maximum flows

ORIGINAL Proposed
changes

Modifications from the Tenaska application submitted in 2001:

- The configuration of the Dominion facility will reduce the number of turbine generators and heat recovery steam generators from three to two each.
- The nominal capacity of the proposed generating facility will decrease from 900 MW to 580 MW.
- The proposed facility configuration will have five established outfalls, three of which will be internal outfalls. Two internal outfalls will discharge cooling tower blowdown and the third one will consist of effluent from the oil/water separator for the treatment of low volume wastes. The fourth outfall will discharge to the James River and will consist of the combined flows from the two cooling tower blowdowns and the oil/water separator. The fifth outfall will be a stormwater outfall to an unnamed tributary to the James River.
- The maximum design flow expected to be discharged through the combined outfall will be 0.58 MGD with an average flow of 0.36 MGD.
- The list of potential stormwater contamination sources was updated to eliminate the pollutants that will not be present due to changes in system configuration.
- The cooling system for Dominion will be operated under 10 cycles of concentration as opposed to the 14 cycles proposed for the Tenaska facility. The modeling analysis and the wastewater characterization were developed to capture worst case conditions using the 10 cycles.
- Wastewater characterization was based on both the number of cycles and different flow regimes. Two water balances, one capturing maximum operational discharge, the other capturing average operational discharge, served as proxy characterizations for daily average and daily maximum concentration, respectively; the two water balances also served as surrogate values for daily maximum and daily average loading, respectively. Under these assumptions, projected wastewater concentration and loading were then developed for Outfall 001 (final effluent), Outfall 101 (oil/water separator), and Outfall 102 (cooling tower).
- Outfall 103 (chiller tower) is not expected to discharge when temperatures are below 59°F, approximately half of a calendar year. To determine daily average concentrations and loads, the following equation was used:

$$\frac{\text{Maximum load (or concentration)} \times 180 \text{ days}}{365 \text{ days}}$$

This calculation provided a conservative estimate of daily average conditions when the chiller tower is in operation.

- The CORMIX modeling report was revised to reflect updated flow statistics for the James River and expected maximum and average discharge flows from the facility. The modeling analysis was performed to verify compliance with the mixing zone established in the VPDES permit under maximum design and average conditions.
- Mixing zone predictions were updated using the MIX.exe file to reflect changes in flow statistics and proposed flows from the facility.

Electronic Code of Federal Regulations

**e-CFR Data is current as of July 18, 2008****Title 40: Protection of Environment**[Browse Previous](#) | [Browse Next](#)**PART 423—STEAM ELECTRIC POWER GENERATING POINT SOURCE CATEGORY****Section Contents**[§ 423.10 Applicability.](#)[§ 423.11 Specialized definitions.](#)[§ 423.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available \(BPT\).](#)[§ 423.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable \(BAT\).](#)[§ 423.14 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology \(BCT\).](#)[\[Reserved\]](#)[§ 423.15 New source performance standards \(NSPS\).](#)[§ 423.16 Pretreatment standards for existing sources \(PSES\).](#)[§ 423.17 Pretreatment standards for new sources \(PSNS\).](#)[Appendix A to Part 423—126 Priority Pollutants](#)

Authority: Secs. 301; 304(b), (c), (e), and (g); 306(b) and (c); 307(b) and (c); and 501, Clean Water Act (Federal Water Pollution Control Act Amendments of 1972, as amended by Clean Water Act of 1977) (the "Act"; 33 U.S.C. 1311; 1314(b), (c), (e), and (g); 1316(b) and (c); 1317(b) and (c); and 1361; 86 Stat. 816, Pub. L. 92-500; 91 Stat. 1567, Pub. L. 95-217), unless otherwise noted.

Source: 47 FR 52304, Nov. 19, 1982, unless otherwise noted.

§ 423.10 Applicability.[top](#)

The provisions of this part are applicable to discharges resulting from the operation of a generating unit by an establishment primarily engaged in the generation of electricity for distribution and sale which results primarily from a process utilizing fossil-type fuel (coal, oil, or gas) or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium.

§ 423.11 Specialized definitions.[top](#)

In addition to the definitions set forth in 40 CFR part 401, the following definitions apply to this part:

(a) The term *total residual chlorine* (or total residual oxidants for intake water with bromides) means the value obtained using the amperometric method for total residual chlorine described in 40 CFR part 136.

(b) The term *low volume waste sources* means, taken collectively as if from one source, wastewater from all sources except those for which specific limitations are otherwise established in this part. Low volume wastes sources include, but are not limited to: wastewaters from wet scrubber air pollution control systems, ion exchange water treatment system, water treatment evaporator blowdown, laboratory and sampling streams, boiler blowdown, floor drains, cooling tower basin cleaning wastes, and recirculating house service water systems. Sanitary and air conditioning wastes are not included.

(c) The term *chemical metal cleaning waste* means any wastewater resulting from the cleaning of any metal process equipment with chemical compounds, including, but not limited to, boiler tube cleaning.

(d) The term *metal cleaning waste* means any wastewater resulting from cleaning [with or without chemical cleaning compounds] any metal process equipment including, but not limited to, boiler tube cleaning, boiler fireside cleaning, and air preheater cleaning.

(e) The term *fly ash* means the ash that is carried out of the furnace by the gas stream and collected by mechanical precipitators, electrostatic precipitators, and/or fabric filters. Economizer ash is included when it is collected with fly ash.

(f) The term *bottom ash* means the ash that drops out of the furnace gas stream in the furnace and in the economizer sections. Economizer ash is included when it is collected with bottom ash.

(g) The term *once through cooling water* means water passed through the main cooling condensers in one or two passes for the purpose of removing waste heat.

(h) The term *recirculated cooling water* means water which is passed through the main condensers for the purpose of removing waste heat, passed through a cooling device for the purpose of removing such heat from the water and then passed again, except for blowdown, through the main condenser.

(i) The term *10 year, 24/hour rainfall event* means a rainfall event with a probable recurrence interval of once in ten years as defined by the National Weather Service in Technical Paper No. 40, *Rainfall Frequency Atlas of the United States*, May 1961 or equivalent regional rainfall probability information developed therefrom.

(j) The term *blowdown* means the minimum discharge of recirculating water for the purpose of discharging materials contained in the water, the further buildup of which would cause concentration in amounts exceeding limits established by best engineering practices.

(k) The term *average concentration* as it relates to chlorine discharge means the average of analyses made over a single period of chlorine release which does not exceed two hours.

(l) The term *free available chlorine* shall mean the value obtained using the amperometric titration method for free available chlorine described in *Standard Methods for the Examination of Water and Wastewater*, page 112 (13th edition).

(m) The term *coal pile runoff* means the rainfall runoff from or through any coal storage pile.

§ 423.12 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT).



[top](#)

(a) In establishing the limitations set forth in this section, EPA took into account all information it was able to collect, develop and solicit with respect to factors (such as age and size of plant, utilization of facilities, raw materials, manufacturing processes, non-water quality environmental impacts, control and treatment technology available, energy requirements and costs) which can affect the industry subcategorization and effluent levels established. It is, however, possible that data which would affect these limitations have not been available and, as a result, these limitations should be adjusted for certain plants in this industry. An individual discharger or other interested person may submit evidence to the Regional Administrator (or to the State, if the State has the authority to issue NPDES permits) that factors relating to the equipment or facilities involved, the process applied, or other such factors related

to such discharger are fundamentally different from the factors considered in the establishment of the guidelines. On the basis of such evidence or other available information, the Regional Administrator (or the State) will make a written finding that such factors are or are not fundamentally different for that facility compared to those specified in the Development Document. If such fundamentally different factors are found to exist, the Regional Administrator or the State shall establish for the discharger effluent limitations in the NPDES Permit either more or less stringent than the limitations established herein, to the extent dictated by such fundamentally different factors. Such limitations must be approved by the Administrator of the Environmental Protection Agency. The Administrator may approve or disapprove such limitations, specify other limitations, or initiate proceedings to revise these regulations. The phrase "other such factors" appearing above may include significant cost differentials. In no event may a discharger's impact on receiving water quality be considered as a factor under this paragraph.

(b) Any existing point source subject to this subpart must achieve the following effluent limitations representing the degree of effluent reduction by the application of the best practicable control technology currently available (BPT):

(1) The pH of all discharges, except once through cooling water, shall be within the range of 6.0–9.0.

(2) There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

(3) The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and grease	20.0	15.0

(4) The quantity of pollutants discharged in fly ash and bottom ash transport water shall not exceed the quantity determined by multiplying the flow of fly ash and bottom ash transport water times the concentration listed in the following table:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and grease	20.0	15.0

(5) The quantity of pollutants discharged in metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of metal cleaning wastes times the concentration listed in the following table:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and grease	20.0	15.0
Copper, total	1.0	1.0
Iron, total	1.0	1.0

(6) The quantity of pollutants discharged in once through cooling water shall not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed in the following table:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum concentration (mg/l)	Average concentration (mg/l)
Free available chlorine	0.5	0.2

(7) The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown sources times the concentration listed in the following table:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum concentration (mg/l)	Average concentration (mg/l)
Free available chlorine	0.5	0.2

(8) Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

(9) Subject to the provisions of paragraph (b)(10) of this section, the following effluent limitations shall apply to the point source discharges of coal pile runoff:

Pollutant or pollutant property	BPT effluent limitations	
	Maximum concentration for any time (mg/l)	
TSS	50	

(10) Any untreated overflow from facilities designed, constructed, and operated to treat the volume of coal pile runoff which is associated with a 10 year, 24 hour rainfall event shall not be subject to the limitations in paragraph (b)(9) of this section.

(11) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass based limitations specified in paragraphs (b) (3) through (7) of this section. Concentration limitations shall be those concentrations specified in this section.

(12) In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (b)(1) through (11) of this section attributable to each controlled waste source shall not exceed the specified limitations for that waste source.

(The information collection requirements contained in paragraph (a) were approved by the Office of Management and Budget under control number 2000-0194)

[47 FR 52304, Nov. 19, 1982, as amended at 48 FR 31404, July 8, 1983]

§ 423.13 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).



Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this part must achieve the following effluent limitations representing the degree of effluent reduction attainable by the application of the best available technology economically achievable (BAT).

(a) There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

(b)(1) For any plant with a total rated electric generating capacity of 25 or more megawatts, the quantity of pollutants discharged in once through cooling water from each discharge point shall not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times the concentration listed in the following table:

Pollutant or pollutant property	BAT Effluent Limitations
	Maximum concentration (mg/l)
Total residual chlorine	0.20

(2) Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the discharger demonstrates to the permitting authority that discharge for more than two hours is required for macroinvertebrate control. Simultaneous multi-unit chlorination is permitted.

(c)(1) For any plant with a total rated generating capacity of less than 25 megawatts, the quantity of pollutants discharged in once through cooling water shall not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed in the following table:

Pollutant or pollutant property	BAT effluent limitations	
	Maximum concentration (mg/l)	Average concentration (mg/l)
Free available chlorine	0.5	0.2

(2) Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

(d)(1) The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown times the concentration listed below:

Pollutant or pollutant property	BAT effluent limitations	
	Maximum concentration (mg/l)	Average concentration (mg/l)
Free available chlorine	0.5	0.2

Pollutant or pollutant property	Maximum for any 1 day - (mg/l)	Average of daily values for 30 consecutive days shall not exceed =(mg/l)
The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance, except:	(¹)	(¹)
Chromium, total	0.2	0.2
Zinc, total	1.0	1.0

¹No detectable amount.

(2) Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

(3) At the permitting authority's discretion, instead of the monitoring specified in 40 CFR 122.11(b) compliance with the limitations for the 126 priority pollutants in paragraph (d)(1) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

(e) The quantity of pollutants discharged in chemical metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of chemical metal cleaning wastes times the concentration listed in the following table:

Pollutant or pollutant property	BAT effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed -(mg/l)
Copper, total	1.0	1.0
Iron, total	1.0	1.0

(f) [Reserved—Nonchemical Metal Cleaning Wastes].

(g) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass based limitations specified in paragraphs (b) through (e) of this section. Concentration limitations shall be those concentrations specified in this section.

(h) In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a) through (g) of this section attributable to each controlled waste source shall not exceed the specified limitation for that waste source.

(The information collection requirements contained in paragraphs (c)(2) and (d)(2) were approved by the Office of Management and Budget under control number 2040-0040. The information collection requirements contained in paragraph (d)(3) were approved under control number 2040-0033.)

[47 FR 52304, Nov. 19, 1982, as amended at 48 FR 31404, July 8, 1983]

§ 423.14 Effluent limitations guidelines representing the degree of effluent reduction attainable by the application of the best conventional pollutant control technology (BCT). [Reserved]



[top](#)

§ 423.15 New source performance standards (NSPS).



[top](#)

Any new source subject to this subpart must achieve the following new source performance standards:

(a) The pH of all discharges, except once through cooling water, shall be within the range of 6.0–9.0.

(b) There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

(c) The quantity of pollutants discharged from low volume waste sources shall not exceed the quantity determined by multiplying the flow of low volume waste sources times the concentration listed in the following table:

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and grease	20.0	15.0

(d) The quantity of pollutants discharged in chemical metal cleaning wastes shall not exceed the quantity determined by multiplying the flow of chemical metal cleaning wastes times the concentration listed in the following table:

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and grease	20.0	15.0
Copper, total	1.0	1.0
Iron, total	1.0	1.0

(e) [Reserved—Nonchemical Metal Cleaning Wastes].

(f) The quantity of pollutants discharged in bottom ash transport water shall not exceed the quantity determined by multiplying the flow of the bottom ash transport water times the concentration listed in the following table:

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed (mg/l)
TSS	100.0	30.0
Oil and grease	20.0	15.0

(g) There shall be no discharge of wastewater pollutants from fly ash transport water.

(h)(1) For any plant with a total rated electric generating capacity of 25 or more megawatts, the quantity of pollutants discharged in once through cooling water from each discharge point shall not exceed the quantity determined by multiplying the flow of once through cooling water from each discharge point times the concentration listed in the following table:

Pollutant or pollutant property	NSPS effluent limitations
	Maximum concentration (mg/l)
Total residual chlorine	0.20

(2) Total residual chlorine may not be discharged from any single generating unit for more than two hours per day unless the discharger demonstrates to the permitting authority that discharge for more than two hours is required for macroinvertebrate control. Simultaneous multi-unit chlorination is permitted.

(i)(1) For any plant with a total rated generating capacity of less than 25 megawatts, the quantity of pollutants discharged in once through cooling water shall not exceed the quantity determined by multiplying the flow of once through cooling water sources times the concentration listed in the following table:

Pollutant of pollutant property	NSPS effluent limitations	
	Maximum concentration (mg/l)	Average concentration (mg/l)
Free available chlorine	0.5	0.2

(2) Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

(j)(1) The quantity of pollutants discharged in cooling tower blowdown shall not exceed the quantity determined by multiplying the flow of cooling tower blowdown times the concentration listed below:

Pollutant or pollutant property	NSPS effluent limitations	
	Maximum concentration (mg/l)	Average concentration (mg/l)
Free available chlorine	0.5	0.2
Pollutant or pollutant property	Maximum for any 1 day (mg/l)	Average of daily values for 30 consecutive days shall not exceed -(mg/l)
The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance, except:	(¹)	(¹)
Chromium, total	0.2	0.2
Zinc, total	1.0	1.0

¹No detectable amount.

(2) Neither free available chlorine nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator or State, if the State has NPDES permit issuing authority, that the units in a particular location cannot operate at or below this level of chlorination.

(3) At the permitting authority's discretion, instead of the monitoring in 40 CFR 122.11(b), compliance with the limitations for the 126 priority pollutants in paragraph (j)(1) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

(k) Subject to the provisions of §423.15(l), the quantity or quality of pollutants or pollutant parameters discharged in coal pile runoff shall not exceed the limitations specified below:

Pollutant or pollutant property	NSPS effluent limitations for any time
TSS	Not to exceed 50 mg/l.

(l) Any untreated overflow from facilities designed, constructed, and operated to treat the coal pile runoff which results from a 10 year, 24 hour rainfall event shall not be subject to the limitations in §423.15(k).

(m) At the permitting authority's discretion, the quantity of pollutant allowed to be discharged may be expressed as a concentration limitation instead of the mass based limitation specified in paragraphs (c) through (j) of this section. Concentration limits shall be based on the concentrations specified in this section.

(n) In the event that waste streams from various sources are combined for treatment or discharge, the quantity of each pollutant or pollutant property controlled in paragraphs (a) through (m) of this section attributable to each controlled waste source shall not exceed the specified limitation for that waste source.

(The information collection requirements contained in paragraphs (h)(2), (i)(2), and (j)(2) were approved by the Office of Management and Budget under control number 2040-0040. The information collection requirements contained in paragraph (j)(3) were approved under control number 2040-0033.)

[47 FR 52304, Nov. 19, 1982, as amended at 48 FR 31404, July 8, 1983]

§ 423.16 Pretreatment standards for existing sources (PSES).



[top](#)

Except as provided in 40 CFR 403.7 and 403.13, any existing source subject to this subpart which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and achieve the following pretreatment standards for existing sources (PSES) by July 1, 1984:

(a) There shall be no discharge of polychlorinated biphenol compounds such as those used for transformer fluid.

(b) The pollutants discharged in chemical metal cleaning wastes shall not exceed the concentration listed in the following table:

Pollutant or pollutant property	PSES pretreatment standards
	Maximum for 1 day (mg/l)
Copper, total	1.0

(c) [Reserved—Nonchemical Metal Cleaning Wastes].

(d)(1) The pollutants discharged in cooling tower blowdown shall not exceed the concentration listed in the following table:

Pollutant or pollutant property	PSES pretreatment standards
	Maximum for any time (mg/l)
The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance, except:	(¹)
Chromium, total	0.2
Zinc, total	1.0

¹No detectable amount.

(2) At the permitting authority's discretion, instead of the monitoring in 40 CFR 122.11(b), compliance with the limitations for the 126 priority pollutants in paragraph (d)(1) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

§ 423.17 Pretreatment standards for new sources (PSNS).
[top](#)

Except as provided in 40 CFR 403.7, any new source subject to this subpart part which introduces pollutants into a publicly owned treatment works must comply with 40 CFR part 403 and the following pretreatment standards for new sources (PSNS).

(a) There shall be no discharge of polychlorinated biphenyl compounds such as those used for transformer fluid.

(b) The pollutants discharged in chemical metal cleaning wastes shall not exceed the concentration listed in the following table:

Pollutant or pollutant property	PSNS pretreatment standards
	Maximum for 1 day (mg/l)
Copper, total	1.0

(c) [Reserved—Nonchemical Metal Cleaning Wastes].

(d)(1) The pollutants discharged in cooling tower blowdown shall not exceed the concentration listed in the following table:

Pollutant or pollutant property	PSNS pretreatment standards
	Maximum for any time (mg/l)
The 126 priority pollutants (Appendix A) contained in chemicals added for cooling tower maintenance, except:	
Chromium, total	0.2
Zinc, total	1.0

(2) At the permitting authority's discretion, instead of the monitoring in 40 CFR 122.11(b), compliance with the limitations for the 126 priority pollutants in paragraph (d)(1) of this section may be determined by engineering calculations which demonstrate that the regulated pollutants are not detectable in the final discharge by the analytical methods in 40 CFR part 136.

(e) There shall be no discharge of wastewater pollutants from fly ash transport water.

Appendix A to Part 423—126 Priority Pollutants
[top](#)

001 Acenaphthene

002 Acrolein

003 Acrylonitrile

004 Benzene

005 Benzidine

006 Carbon tetrachloride (tetrachloromethane)

007 Chlorobenzene

008 1,2,4-trichlorobenzene

009 Hexachlorobenzene

010 1,2-dichloroethane

011 1,1,1-trichloroethane

012 Hexachloroethane

013 1,1-dichloroethane

014 1,1,2-trichloroethane

015 1,1,2,2-tetrachloroethane

016 Chloroethane

018 Bis(2-chloroethyl) ether

019 2-chloroethyl vinyl ether (mixed)

020 2-chloronaphthalene

021 2,4, 6-trichlorophenol

022 Parachlorometa cresol

023 Chloroform (trichloromethane)

024 2-chlorophenol

025 1,2-dichlorobenzene

026 1,3-dichlorobenzene

027 1,4-dichlorobenzene

028 3,3-dichlorobenzidine

029 1,1-dichloroethylene

030 1,2-trans-dichloroethylene

031 2,4-dichlorophenol

032 1,2-dichloropropane

033 1,2-dichloropropylene (1,3-dichloropropene)

034 2,4-dimethylphenol

035 2,4-dinitrotoluene

036 2,6-dinitrotoluene

037 1,2-diphenylhydrazine

038 Ethylbenzene

039 Fluoranthene

040 4-chlorophenyl phenyl ether

041 4-bromophenyl phenyl ether

042 Bis(2-chloroisopropyl) ether

043 Bis(2-chloroethoxy) methane

044 Methylene chloride (dichloromethane)

045 Methyl chloride (dichloromethane)

046 Methyl bromide (bromomethane)

047 Bromoform (tribromomethane)

048 Dichlorobromomethane

051 Chlorodibromomethane

052 Hexachlorobutadiene

053 Hexachloromyclopentadiene

054 Isophorone

055 Naphthalene

056 Nitrobenzene

057 2-nitrophenol

058 4-nitrophenol

059 2,4-dinitrophenol

060 4,6-dinitro-o-cresol

061 N-nitrosodimethylamine

062 N-nitrosodiphenylamine

063 N-nitrosodi-n-propylamin

064 Pentachlorophenol

065 Phenol

066 Bis(2-ethylhexyl) phthalate

067 Butyl benzyl phthalate

068 Di-N-Butyl Phthalate

069 Di-n-octyl phthalate

070 Diethyl Phthalate

071 Dimethyl phthalate

072 1,2-benzanthracene (benzo(a) anthracene)

073 Benzo(a)pyrene (3,4-benzo-pyrene)

074 3,4-Benzofluoranthene (benzo(b) fluoranthene)

075 11,12-benzofluoranthene (benzo(b) fluoranthene)

076 Chrysene

077 Acenaphthylene

078 Anthracene

079 1,12-benzoperylene (benzo(ghi) perylene)

080 Fluorene

081 Phenanthrene

082 1,2,5,6-dibenzanthracene (dibenzo(h) anthracene)

083 Indeno (,1,2,3-cd) pyrene (2,3-o-pheynylene pyrene)

084 Pyrene

085 Tetrachloroethylene

086 Toluene

087 Trichloroethylene

088 Vinyl chloride (chloroethylene)

089 Aldrin

090 Dieldrin

091 Chlordane (technical mixture and metabolites)

092 4,4-DDT

093 4,4-DDE (p,p-DDX)

094 4,4-DDD (p,p-TDE)

095 Alpha-endosulfan

096 Beta-endosulfan

097 Endosulfan sulfate

098 Endrin

099 Endrin aldehyde

100 Heptachlor

101 Heptachlor epoxide (BHC-hexachlorocyclohexane)

102 Alpha-BHC

103 Beta-BHC

104 Gamma-BHC (lindane)

105 Delta-BHC (PCB-polychlorinated biphenyls)

106 PCB-1242 (Arochlor 1242)

107 PCB-1254 (Arochlor 1254)

108 PCB-1221 (Arochlor 1221)

109 PCB-1232 (Arochlor 1232)

110 PCB-1248 (Arochlor 1248)

111 PCB-1260 (Arochlor 1260)

112 PCB-1016 (Arochlor 1016)

113 Toxaphene

114 Antimony

115 Arsenic

116 Asbestos

117 Beryllium

118 Cadmium

119 Chromium

120 Copper

121 Cyanide, Total

122 Lead

123 Mercury

124 Nickel

125 Selenium

126 Silver

127 Thallium

126 Silver

128 Zinc

129 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD)

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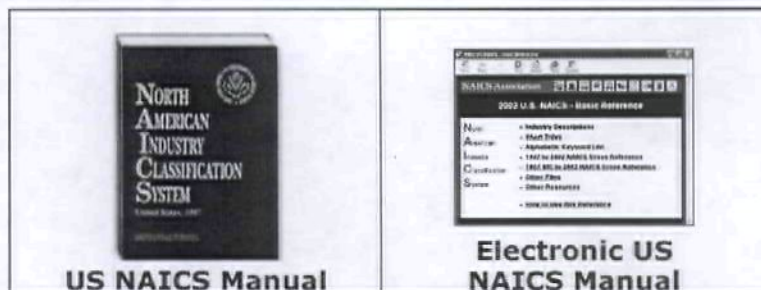
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Washington, DC 20210

ATTACHMENT 8

SPECIAL CONDITIONS RATIONALE

**VPDES PERMIT PROGRAM
LIST OF SPECIAL CONDITIONS RATIONALE**

Name of Condition:

B. OTHER REQUIREMENTS OR SPECIAL CONDITIONS

1. Permit Reopeners

a. Water Quality Criteria Reopener

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-220 D., Water Quality Standards and State Requirements, requires that the permit include limits to achieve water quality standards, including the narrative criteria. 40 CFR Part 131, Water Quality Standards, requires the state to adopt water quality criteria to protect designated water uses (subpart 131.11), and review, modify and adopt water quality standards periodically (subpart 131.20). Section 302 of the Clean Water Act authorizes effluent limitations to be established which will contribute to the attainment or maintenance of the water quality.

b. Chesapeake Bay Nutrients Reopener

Rationale: Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2004 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that 83% of the mainstem Bay does not fully support this use support goal under Virginia's water quality assessment guidelines. Nutrient enrichment is cited as one of the primary causes for impairment.

c. Total Maximum Daily Load (TMDL)] Reopener

Rationale: Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired in order that they achieve the applicable water quality standards. This condition allows for the permit to be either modified or, alternatively, revoked and reissued to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan or other waste load allocation prepared under section 303 of the Act.

2. Licensed Wastewater Operator Requirement

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 D., requires the permittee to employ or contract at least one wastewater works operator who holds a current wastewater license for the permitted facility. The Code of Virginia 54.1-2300 et seq., Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. In addition, the Sewerage Collection and Treatment Regulations (12 VAC 5-581-10 et seq.), recommends a manning and classification schedule for domestic wastewater treatment plant operators, based on plant capacity and specific treatment types.

Based on the size and type of treatment facility, no licensed wastewater operator is required.

3. Operations & Maintenance (O & M) Manual

Rationale: The State Water Control Law, Section 62.1-44.16 requires the submittal of pertinent plans, specifications, maps and such other relevant information as may be required and Section 62.1-44.21 allows requests for any information necessary to determine the effect of the discharge on state waters. Required by the VPDES Permit Regulation, 9 VAC 25-31-190 E. Section 401 of the Clean Water Act requires the permittee to provide opportunity for the state to review the proposed operations of the facility. In addition, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and

maintain all facilities and systems of treatment and control (and related appurtenances) in order to achieve compliance with the permit (includes laboratory controls and QA/QC).

4. Notification Levels

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 A. and 40 CFR 122.42 (a) require notification of the discharge of certain parameters at or above specific concentrations for all manufacturing, commercial, mining and silvicultural discharges.

5. New Discharges Permitted from Application Form 2D

Rationale: The permit limitations are based on assumed effluent quality characteristics when application Form 2D is used. These assumptions (and the permit basis) can only be validated with actual effluent data. The submission of actual data is required in the application form instructions.

6. Form 2F Sampling

Rationale: The permit requirements for storm water are based on assumed effluent quality characteristics (no data submitted with application as required). These assumptions (and the permit basis) can only be validated with actual effluent data. In addition, in some cases, the applicant may not have been able to comply with the Form 2F storm water sampling requirements due to the lack of a representative storm event. The submission of actual data is required in the application form instructions.

7. Compliance Reporting Under Part I.A.

Rationale: Authorized by the VPDES Permit Regulation, 9 VAC 25-31-190 J.4. and 220 I. This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

8. Water Quality Monitoring

Rationale: The State Water Control Law, Section 62.1-44.21, authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To insure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of the permit.

9. Cooling Water and Boiler Additives

Rationale: Chemical additives may be toxic or otherwise violate the receiving stream water quality standards. Upon notification, the regional office can determine if this new additive will warrant a modification to the permit.

10. PCB Discharge Prohibition

Rationale: Federal Effluent Guidelines 40 CFR §423.15 for the Steam Electric Power Generating Point Source Category.

11. Additional Instructions Regarding 126 Priority Pollutants (Outfall 102 and 103)

Rationale: Federal Effluent Guidelines 40 CFR §423.15 for the Steam Electric Power Generating Point Source Category.

12. Additional Temperature Limitations

Rationale: §9 VAC 25-260-70

13. Mixing Zone Requirements/Monitoring

Rationale: §9 VAC 25-260-70

14. Notification of Commencement of Discharge

Rationale: The initiation of discharge date is needed because several monitoring and reporting requirements are triggered by this date.

15. Permit Application Requirement

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-100 D. and 40 CFR 122.21 (d)(1) require a new application at least 180 days prior to expiration of the existing permit. In addition, the VPDES Permit Regulation, 9 VAC 25-31-100 E.1. and 40 CFR 122.21 (e)(1) note that a permit shall not be issued before receiving a complete application.

C. TOXICS MANAGEMENT PROGRAM (TMP)

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-210 and 220 I., and 40 CFR 122.44(d) require monitoring in the permit to provide for and assure compliance with all applicable requirements of the Clean Water Act and the State Water Control Law. See additional justification included in this attachment.

D. STORM WATER MANAGEMENT CONDITIONS

Rationale: Required by the VPDES Permit Regulation. Section 9 VAC 25-31-10 defines discharges of storm water from industrial activity and includes 11 industrial categories [9 of which are covered by the VPDES general permit for discharges of storm water associated with industrial activity (9 VAC 25-151-10 et seq.)] Included in the covered categories are municipal treatment plants with a design flow of 1.0 MGD or more, or plants with approved pretreatment programs, as discharges of storm water associated with industrial activity. Section 9 VAC 25-31-120 requires a permit for all these discharges associated with an industrial activity. The storm water pollution prevention plan requirements are derived from the VPDES general permit 9 VAC 25-151-10 et seq., which is based on the EPA storm water multi-sector general permit for industrial activities.

1. General Storm Water Conditions

a. Sample Type

Rationale: This stipulates the proper sampling methodology for qualifying rain events from regulated storm water outfalls. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

b. Storm Event Data

Rationale: This sets forth the information which must be recorded and reported for each storm event sampling (ie. date and duration event, rainfall measurement, and duration between qualifying events). It requires the maintenance of daily rainfall logs which are to be reported. It also provides guidance for when there is no effluent to sample during a given period. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

c. Monitoring Waivers

Rationale: This condition allows the permittee to collect substitute samples of qualifying storm events in the event of adverse climatic conditions. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

d. Representative Outfalls

Rationale: This condition allows the permittee to submit the results of sampling from one outfall as representative of other similar outfalls, provided the permittee can demonstrate that the outfalls are substantially identical. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

e. Quarterly Visual Monitoring of Storm Water Quality

Rationale: This condition requires that visual examinations of storm water outfalls take place at a specified frequency and sets forth what information needs to be checked and documented. These examinations assist with the evaluation of the pollution prevention plan by providing a simple, low cost means of assessing the quality of storm water discharge with immediate feedback. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

f. Allowable Non-storm Water Discharges

Rationale: This condition requires that the storm water pollution prevention plan identify specified non-storm water discharges and ensure the implementation of appropriate pollution prevention measures for each of the non-storm water components of the discharge. Where these classes of non-storm water discharges are identified in the plan and where appropriate pollution prevention measures are evaluated, identified and implemented, they generally pose low risks to the environment. Also, identification of these discharges in the plan negates the need to cover them under a separate VPDES permit. Flows from fire fighting activities do not need to be identified in the plan due to the emergency nature of such discharges coupled with their low probability and the unpredictability of their occurrence. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

g. Releases of Hazardous Substances or Oil in Excess of Reportable Quantities

Rationale: This condition requires that the discharge of hazardous substances or oil from a facility be eliminated or minimized in accordance with the facility's storm water pollution prevention plan. If there is a discharge of a material in excess of a reportable quantity, it establishes the reporting requirements in accordance with state laws and federal regulations. In addition, the pollution prevention plan for the facility must be reviewed and revised as necessary to prevent a reoccurrence of the spill. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

h. Additional Requirements for Salt Storage

Rationale: This condition requires that storage piles of salt be covered except during those times when salt is either being added or removed. This is to prevent exposure to precipitation that could result in a brine discharge to surface waters which would be detrimental to the aquatic environment. If the runoff is collected and not discharged to surface waters, the facility is exempt from this requirement. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

i. Water Quality Protection

Rationale: This condition requires the permittee to select, install, implement and maintain BMPs in order to minimize pollutants in the storm water discharges to a point where applicable water quality standards are met. If there is evidence in that the discharge is creating water quality problems, DEQ may require the implementation of additional BMPs to correct the problem or take appropriate enforcement action. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

2. Storm Water Pollution Prevention Plan

Rationale: The Clean Water Act 402(p)(2)(B) requires permits for storm water discharges associated with industrial activity. VPDES permits for storm water discharges must establish BAT/BCT requirements in accordance with 402(p)(3) of the Act. The Storm Water Pollution Prevention Plan is the vehicle proposed by EPA in the NPDES Baseline Industrial Storm Water General Permit (published in the Federal Register September 9, 1992) to meet the requirements of the Act. Additionally, the VPDES Permit Regulation, 9 VAC 25-31-220 K., and 40 CFR 122.44 (k) allow BMPs for the control of pollutants where numeric limits are infeasible or BMPs are needed to accomplish the purpose/intent of the law.

3. Facility-specific Storm Water Management Conditions

Rationale: These conditions set forth additional site-specific storm water pollution prevention plan requirements. Use of this condition is a BPJ determination and is based on the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

Part II CONDITIONS APPLICABLE TO ALL VPDES PERMITS

The VPDES Permit Regulation, 9 VAC 25-31-190, and 40 CFR 122, require all VPDES permits to contain or specifically cite the conditions listed.

Spreadsheet for determination of WET test endpoints or WET limits									
Excel 97		Acute Endpoint/Permit Limit		Use as LC ₅₀ in Special Condition, as TU _a on DMR					
Revision Date: 01/10/05									
File: WETLIM10.xls		ACUTE 8.830276299 TU _a		LC ₅₀ = 12		% Use as 8.33		TU _a	
(MIX.EXE required also)		ACUTE WLA _a 8.83027608		Note: Inform the permittee that if the mean of the data exceeds this TU _a : 2.48107252 a limit may result using WLA EXE					
		Chronic Endpoint/Permit Limit		Use as NOEC in Special Condition, as TU _c on DMR					
		CHRONIC 88.30276299 TU _c		NOEC =		2 % Use as 50.00		TU _c	
		BOTH* 88.30276299 TU _a		NOEC =		2 % Use as 50.00		TU _c	
		AML 88.30276299 TU _c		NOEC =		2 % Use as 50.00		TU _c	
Enter data in the cells with blue type:									
Entry Date: 07/30/09		ACUTE WLA _{a,c} 88.3027608		Note: Inform the permittee that if the mean of the data exceeds this TU _c : 36.2875499 a limit may result using WLA EXE					
Facility Name:		CHRONIC WLA _c 496.072165							
VPDES Number: VA0090891		* Both means acute expressed as chronic							
Outfall Number: 1		% Flow to be used from MIX.EXE		Diffuser /modeling study?					
Plant Flow: 0.485 MGD				Enter Y/N N					
Acute 1Q10: 183.63 MGD		7.51 %		Acute 1:1					
Chronic 7Q10: 240.11 MGD		100 %		Chronic 1:1					
Are data available to calculate CV? (Y/N)		N		(Minimum of 10 data points, same species, needed)				Go to Page 2	
Are data available to calculate ACR? (Y/N)		N		(NOEC < LC50, do not use greater/less than data)				Go to Page 3	
IWC _a 3.397402269 %		Plant flow/plant flow + 1Q10		NOTE: If the IWC _a is >33%, specify the NOAEC = 100% test/endpoint for use					
IWC _c 0.201583574 %		Plant flow/plant flow + 7Q10							
Dilution, acute 28.43425351		100/IWC _a							
Dilution, chronic 466.0721649		100/IWC _c							
WLA _a 8.830276082		Instream criterion (0.3 TU _a) X's Dilution, acute							
WLA _c 496.0721649		Instream criterion (1.0 TU _c) X's Dilution, chronic							
WLA _{a,c} 88.30276082		ACR X's WLA _a - converts acute WLA to chronic units							
ACR -acute/chronic ratio 10		LC50/NOEC (Default is 10 - if data are available, use tables Page 3)							
CV-Coefficient of variation 0.6		Default of 0.6 - if data are available, use tables Page 2)							
Constants eA 0.4109447		Default = 0.41							
eB 0.5010373		Default = 0.60							
eC 2.4334175		Default = 2.43							
eD 2.4334175		Default = 2.43 (1 samp) No. of sample 1							
**The Maximum Daily Limit is calculated from the lowest LTA, X's eC. The LTA _{a,c} and MDL using it are driven by the ACR.									
LTA _{a,c} 36.28755155		WLA _{a,c} X's eA		Rounded NOEC's %					
LTA _c 298.1578745		WLA _c X's eB							
MDL** with LTA _{a,c} 88.30276299 TU _c		NOEC = 1.132467		(Protects from acute/chronic toxicity)		NOEC = 2		%	
MDL** with LTA _c 725.5425899 TU _c		NOEC = 0.137826		(Protects from chronic toxicity)		NOEC = 1		%	
AML with lowest LTA 88.30276299 TU _c		NOEC = 1.132467		Lowest LTA X's eD		NOEC = 2		%	
IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU _c to TU _a									
MDL with LTA _{a,c} 8.830276299 TU _a		LC50 = 11.324674 %		Rounded LC50's %					
MDL with LTA _c 72.55425899 TU _a		LC50 = 1.378279 %		LC50 = 12 %					

Not in Revised
per proposed
design changes

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Page 2 - Follow the directions to develop a site specific CV (coefficient of variation)														
2	IF YOU HAVE AT LEAST 10 DATA POINTS THAT ARE QUANTIFIABLE (NOT "<" OR ">") FOR A SPECIES, ENTER THE DATA IN EITHER COLUMN "G" (VERTEBRATE) OR COLUMN "J" (INVERTEBRATE). THE 'CV' WILL BE PICKED UP FOR THE CALCULATIONS BELOW. THE DEFAULT VALUES FOR eA, eB, AND eC WILL CHANGE IF THE 'CV' IS ANYTHING OTHER THAN 0.6						Vertebrate		Invertebrate						
3							IC ₂₅ Data		IC ₂₅ Data						
4							or		or						
5							LC ₅₀ Data	LN of data	LC ₅₀ Data	LN of data					
6							*****		*****						
7							1	0	1	0					
8							2		2						
9							3		3						
10							4		4						
11							5		5						
12							6		6						
13							7		7						
14	Coefficient of Variation for effluent tests						8		8						
15							9		9						
16	CV = 0.6 (Default 0.6)						10		10						
17							11		11						
18	$\delta^2 = 0.3074847$						12		12						
19	$\delta = 0.554513029$						13		13						
20							14		14						
21	Using the log variance to develop eA (P. 100, step 2a of TSD)						15		15						
22	Z = 1.881 (97% probability stat from table)						16		16						
23	A = -0.88929666						17		17						
24	eA = 0.410944686						18		18						
25							19		19						
26							20		20						
27	Using the log variance to develop eB (P. 100, step 2b of TSD)						St Dev	NEED DATA	NEED DATA	St Dev	NEED DATA	NEED DATA			
28	$\delta_e^2 = 0.086177696$						Mean	0	0	Mean	0	0			
29	$\delta_e = 0.293560379$						Variance	0	0.000000	Variance	0	0.000000			
30	B = -0.50906823						CV	0		CV	0				
31	eB = 0.601037335														
32	Using the log variance to develop eC (P. 100, step 4a of TSD)														
33															
34	$\delta^2 = 0.3074847$														
35	$\delta = 0.554513029$														
36	C = 0.889296658														
37	eC = 2.433417525														
38	Using the log variance to develop eD (P. 100, step 4b of TSD)														
39	n = 1 This number will most likely stay as "1" for 1 sample/month.														
40	$\delta_n^2 = 0.3074847$														
41	$\delta_n = 0.554513029$														
42	D = 0.889296658														
43	eD = 2.433417525														

Page 3 - Follow directions to develop a site specific ACR (Acute to Chronic Ratio)

To determine Acute/Chronic Ratio (ACR), insert usable data below. Usable data is defined as valid paired test results, acute and chronic, tested at the same temperature, same species. The chronic NOEC must be less than the acute LC₅₀, since the ACR divides the LC₅₀ by the NOEC. LC₅₀'s >100% should not be used.

Table 1. ACR using Vertebrate data

Set #	LC ₅₀	NOEC	Test ACR	Logarithm	Geomean	Antilog	ACR to Use
1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA

ACR for vertebrate data: 0

Table 1. Result:

Vertebrate ACR 0

Table 2. Result:

Invertebrate ACR 0

Lowest ACR Default to 10

Table 2. ACR using Invertebrate data

Set #	LC ₅₀	NOEC	Test ACR	Logarithm	Geomean	Antilog	ACR to Use
1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
3	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
6	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
8	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
9	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA
10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	NO DATA

ACR for vertebrate data: 0

Convert LC₅₀'s and NOEC's to Chronic TU's

Table 3.

for use in WLA EXE

ACR used: 10

Enter LC ₅₀	TUc	Enter NOEC	TUc
1	NO DATA		NO DATA
2	NO DATA		NO DATA
3	NO DATA		NO DATA
4	NO DATA		NO DATA
5	NO DATA		NO DATA
6	NO DATA		NO DATA
7	NO DATA		NO DATA
8	NO DATA		NO DATA
9	NO DATA		NO DATA
10	NO DATA		NO DATA
11	NO DATA		NO DATA
12	NO DATA		NO DATA
13	NO DATA		NO DATA
14	NO DATA		NO DATA
15	NO DATA		NO DATA
16	NO DATA		NO DATA
17	NO DATA		NO DATA
18	NO DATA		NO DATA
19	NO DATA		NO DATA
20	NO DATA		NO DATA

If WLA EXE determines that an acute limit is needed, you need to convert the TUc answer you get to TUs and then an LC₅₀.

enter it here:

NO DATA

%LC₅₀

NO DATA

TUa

DILUTION SERIES TO RECOMMEND

Table 4.

	Monitoring	Limit
	% Effluent	TUc
Dilution series based on data mean	2.8	36.28755
Dilution series to use for limit		2
Dilution factor to recommend:	0.166005	0.1414214
Dilution series to recommend:	100.0	1.00
	16.6	6.02
	2.8	36.29
	0.5	218.59
	0.08	1316.79
Extra dilutions if needed	0.01	7932.21
	0.00	47782.95

Cell: I9

Comment:

This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: K18

Comment: This is assuming that the data are Type 2 data (none of the data in the data set are censored - "<" or ">").

Cell: J22

Comment: Remember to change the "N" to "Y" if you have ratios entered, otherwise, they won't be used in the calculations.

Cell: C40

Comment:

If you have entered data to calculate an ACR on page 3, and this is still defaulted to "10", make sure you have selected "Y" in cell E21

Cell: C41

Comment: If you have entered data to calculate an effluent specific CV on page 2, and this is still defaulted to "0.6", make sure you have selected "Y" in cell E20

Cell: L48

Comment:

See Row 151 for the appropriate dilution series to use for these NOEC's

Cell: G82

Comment:

Vertebrates are:
Pimephales promelas
Oncorhynchus mykiss
Cyprinodon variegatus

Cell: J62

Comment:

Invertebrates are:
Ceriodaphnia dubia
Mysidopsis bahia

Cell: C117

Comment: Vertebrates are:

Pimephales promelas
Cyprinodon variegatus

Cell: M119

Comment: The ACR has been picked up from cell C34 on Page 1. If you have paired data to calculate an ACR, enter it in the tables to the left, and make sure you have a "Y" in cell E21 on Page 1. Otherwise, the default of 10 will be used to convert your acute data.

Cell: M121

Comment: If you are only concerned with acute data, you can enter it in the NOEC column for conversion and the number calculated will be equivalent to the TUa. The calculation is the same: $100/\text{NOEC} = \text{TUc}$ or $100/\text{LC50} = \text{TUa}$.

Cell: C138

Comment: Invertebrates are:

Ceriodaphnia dubia
Mysidopsis bahia

MEMORANDUM


VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY SOUTH CENTRAL REGIONAL OFFICE WATER DIVISION

7705 Timberlake Road

Lynchburg, VA 24502

SUBJECT: DOMINION – BEAR GARDEN GENERATING STATION, PERMIT # VA0090891,
TOXICS MANAGEMENT PROGRAM (TMP)

TO: Kip Foster, Water Permits Manager – BRRO

FROM: Kirk Batsel, Environmental Engineer, Sr. – BRRO-L 

DATE: July 30, 2009

General Background

This TMP memorandum supersedes the last TMP development memorandum dated August 5, 2008 from Kirk Batsel to Robert Goode.

The VPDES permit for the subject facility is currently in the process of reissuance. This VPDES permit is for a proposed natural gas and oil fired steam electric power station. The current permit included a TMP due to the reasonable potential for toxicity, based on the SIC Code of 4911 listed in Appendix A of the GM 00-2012 and the discharge of cooling water treated with chemicals. Since the facility has not been constructed no TMP data currently exists. Dominion purchased the facility and assumed the VPDES from the previous owners, Tenaska Virginia II Partners, L.P., in April 2008.

Discussion

Dominion has revised the proposed facility's original design capacity from 900 MW to 580 MW. This change in design resulted in a lower recycle ratio and a lower effluent discharge volume. Originally, as part of this reissuance Dominion proposed to have a maximum design flow of 0.58 MGD. This change in proposed discharge flow resulted in the need to change TMP endpoints. During processing of the reissuance permit, Dominion again decided to make design changes which again resulted in a change in proposed discharge flow of 0.485 MGD. The change in proposed discharge flow resulted in the need to reassess the acute toxicity endpoint. Reassessment of the acute endpoint has now resulted in a change from a LC₅₀ of 20% in the original VPDES permit to an LC₅₀ of 12%. Based on the newly proposed chronic IWC of 0.2%, and in accordance with agency guidance, chronic testing is not required (IWC < 1%). Please refer to the attached WETLIM spreadsheet for specific information.

Conclusions/Recommendations

- 1) A TMP special condition, in accordance with the above is attached for inclusion in the subject reissued permit. This TMP allows for the generation of additional data to address data variability.
- 2) The above recommendations are based on critical receiving stream flow values obtained during this reissuance and the August 24, 2000 Guidance memo No. 00-2012, Toxics Management Program Implementation Guidance. Should new information become available, the above evaluation and recommendations will need to be reconsidered.

C. TOXICS MANAGEMENT PROGRAM

1. Biological Monitoring:

- a. In accordance with the schedule in 2. below and starting within three months of commencement of discharge from the facility, the permittee shall conduct quarterly acute toxicity tests until there are a minimum of 10 tests for each species. The permittee should collect 24-hour flow-proportioned composite samples of final effluent from Outfall 001. The acute tests to use are:

48 Hour Static Acute test using *Ceriodaphnia dubia*
48 Hour Static Acute test using *Pimephales promelas*

These acute tests shall be performed with a minimum of 5 dilutions, derived geometrically, for calculation of a valid LC_{50} . Express the results as TU_a (Acute Toxic Units) by dividing $100/LC_{50}$ for DMR reporting.

The permittee may provide additional samples to address data variability during the period of initial data generation. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.

- b. The test dilutions should be able to determine compliance with the following endpoint.

Acute LC_{50} of 12% equivalent to a TU_a of 8.33

- c. The test data may be evaluated by STATS.EXE for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed, a WET limit and compliance schedule will be required and the toxicity tests of 1.a. may be discontinued.
- d. If after evaluating the data, it is determined that no limit is needed, the permittee shall continue acute and chronic toxicity testing (both species) of the outfall annually, as on the reporting schedule in 2.
- e. All applicable data will be reevaluated for reasonable potential at the end of the permit term.

2. Reporting Schedule:

The permittee shall report the results on the DMR and supply 1 copy of the toxicity test reports specified in this Toxics Management Program in accordance with the following schedule:

Period	Compliance Periods	DMR/Report Submission Dates
Quarter 1	Within 3 months of commencement of discharge	By the 10 th of the fourth month following commencement of discharge
Quarter 2	Within 3 months of Quarter 1	By the 10 th of the seventh month following commencement of discharge
Quarter 3	Within 3 months of Quarter 2	By the 10 th of the tenth month following commencement of discharge
Quarter 4	Within 3 months of Quarter 3	By the 10 th of the thirteenth month following commencement of discharge
Quarter 5	Within 3 months of Quarter 4	By the 10 th of the sixteenth month following commencement of discharge
Quarter 6	Within 3 months of Quarter 5	By the 10 th of the nineteenth month following commencement of discharge
Quarter 7	Within 3 months of Quarter 6	By the 10 th of the twenty-second month following commencement of discharge
Quarter 8	Within 3 months of Quarter 7	By the 10 th of the twenty-fifth month following commencement of discharge
Quarter 9	Within 3 months of Quarter 8	By the 10 th of the twenty-eighth month following commencement of discharge
Annual 1	Within 3 months of Quarter 9	By the 10 th of the thirty-first month following commencement of discharge
Annual 2	Within 12 months of Annual 1	By the 10 th of the forty-third month following commencement of discharge

ATTACHMENT 9

MATERIAL STORED

List of Potential Water Contamination Sources

Potential source	Contents	Description
Acid tank	Sulfuric acid	Welded steel tank inside concrete containment area
Ammonia tank	Aqueous Ammonia	Welded steel tank inside concrete containment area
Caustic	Sodium hydroxide	55 gallon drums inside metal or masonry building on concrete slab with spill containment curbs
Chemical feeding equipment area	Water treatment chemicals	Metal cover over concrete slab with spill containment curbs
Chemical waste sump	Water with potential traces of chemicals	Concrete pit
Cooling tower	Cooling water	Cooling tower over concrete basin
Inlet chiller cooling tower	Cooling water	Cooling tower over steel basin
Demineralizer water tank	Demineralized water	Welded steel tank
HRSG drain sump	Steam condensate	Concrete pit
Hypochlorite tank	Sodium hypochlorite	Fiberglass reinforced polyester tank inside concrete containment area
Oil/Water separator	Water with potential traces of oil	Steel separator
Raw water clarifier	Waste water	Steel or concrete clarifier basin
Septic field	Sanitary wastewater	Septic field
Filter/Fire Water tank	Clarified and filtered water	Welded steel tank
Wastewater sump	Wastewater	Concrete pit
Water treatment building	Water treatment chemicals	Metal or masonry building on concrete slab with spill containment curbs
Clarified Water tank	Clarified water	Welded steel tank
Station transformers	Transformer oils	Inside containment area
Fuel unloading transfer station	Fuel oil	Drains to oil water separator
Fuel oil tanks	Fuel oil	Steel tank in secondary containment

ATTACHMENT 10

**RECEIVING WATERS INFO./
TIER DETERMINATION/STORET DATA**

***Planning Statement for VPDES Permit Application Processing
DEQ-SCRO***

VPDES	OwnerName	Facility	County
VA0090891	Dominion Power	Bear Garden Power Station	Buckingham

Outfall #: 001

River Basin: James River (Middle)

Receiving Stream: James River

Subbasin: James River

Watershed Code: H20R

River Mile: 176

	MGD		MGD
1Q10	183.63	HF 1Q10	618.89
7Q10	240.11	HF7Q10	791.39
30Q5	404.42	HF30Q10	1026.54
30Q10	336.11	HM	1392.78

Modeling Notes

WQMP Name 9 VAC 25-720-60

Statement There are no allocations included in the plan
for this facility.

TMDL ID VAC-H03R-04/00546

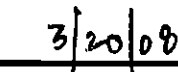
Impairment Cause PCBs in Fish Tissue

TMDL Due Date 2016

Completed TMDL Information

TMDL Approval Dates


Amanda B. Gray, Water Planning Engineer


Date

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Dominion Power – Bear Garden Power Station #VA0090891

TO: Kirk Batsel

FROM: Amanda Gray *day*

DATE: March 20, 2008

COPIES: File

The Bear Garden Power Station is proposing to discharge to the James River near New Canton, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The USGS has operated a continuous record gage on the James River at Scottsville, VA (#02029000) since 1924. The gage is located at the Route 20 bridge in Scottsville, VA. The flow frequencies determination for this gage is based on the regulated period beginning in 1980.

Between the gage and the discharge point, the Slate River and the Hardware River empty into the James River. The flow frequencies for each of these significant tributaries were determined using data from long term gages on each river. The gage on the Slate River near Arvon, VA (#02030500) operated from 1926 to 1995 and the gage on the Hardware River below Briery Run, near Scottsville, VA (#02030000) has been in operation since 1938. The flow contributed by the ungaged drainage area between the James River gage and the discharge point were estimated using the Hardware River gage by the method of proportional drainage areas.

The flow frequencies for the gages, the ungaged drainage area, and the discharge point are listed below. The flow frequencies for the discharge point have been reduced by the volume of the Virginia Power – Bremono Bluff Power Station withdrawal. During the high flow period, December through May, the maximum withdrawal by the power station occurred during January 1987 and equaled 5,464.37 million gallons (273 cfs) while the low flow period maximum withdrawal occurred during July 1987 and equaled 5,519.55 million gallons (275 cfs). Since the withdrawal is located upstream of the discharge point and downstream of the gage, the withdrawal volumes must be subtracted from the flow frequencies for the James River at Scottsville gage. This analysis does not take into consideration any other withdrawals, discharges, or springs.

James River at Scottsville, VA (#02029000):

Drainage Area = 4,584 mi²

1Q10 = 543 cfs	High Flow 1Q10 = 1140 cfs
7Q10 = 628 cfs	High Flow 7Q10 = 1390 cfs
30Q5 = 847 cfs	High Flow 30Q10 = 1710 cfs
30Q10 = 764 cfs	Harmonic Mean = 2350 cfs

Slate River near Arvon, VA (#02030500):

Drainage Area = 226 mi ²	
1Q10 = 8.2 cfs	High Flow 1Q10 = 43 cfs
7Q10 = 10 cfs	High Flow 7Q10 = 52 cfs
30Q5 = 24 cfs	High Flow 30Q10 = 76 cfs
30Q10 = 16 cfs	Harmonic Mean = 80 cfs

Hardware River below Briery Run, near Scottsville, VA (#02030000):

Drainage Area = 116 mi ²	
1Q10 = 4.0 cfs	High Flow 1Q10 = 24 cfs
7Q10 = 4.3 cfs	High Flow 7Q10 = 28 cfs
30Q5 = 15 cfs	High Flow 30Q10 = 38 cfs
30Q10 = 7.6 cfs	Harmonic Mean = 0 cfs*
* Harmonic Mean equals zero due to some 0.0 flow measurements in 2002.	

Using the Hardware River gage and drainage area proportions, the flow contributed by the ungaged drainage area is...

Flow Contributed by Ungaged Drainage Area:

Drainage Area = 114 mi ²	
1Q10 = 3.93 cfs	High Flow 1Q10 = 23.59 cfs
7Q10 = 4.22 cfs	High Flow 7Q10 = 27.5 cfs
30Q5 = 14.74 cfs	High Flow 30Q10 = 37.34 cfs
30Q10 = 7.46 cfs	Harmonic Mean = 0.0 cfs

Adding all the contributing flow and subtracting the Virginia Power withdrawal...

James River at the discharge point:

1Q10 = 543 + 8.2 + 4.0 + 3.93 - 275 = 284.13 cfs (183.63 mgd)
7Q10 = 628 + 10 + 4.3 + 4.22 - 275 = 371.52 cfs (240.11 mgd)
30Q5 = 847 + 24 + 15 + 14.74 - 275 = 625.74 cfs (404.42 mgd)
30Q10 = 764 + 16 + 7.6 + 7.46 - 275 = 520.06 cfs (336.11 mgd)
High Flow 1Q10 = 1140 + 43 + 24 + 23.59 - 273 = 957.59 cfs (618.89 mgd)
High Flow 7Q10 = 1390 + 52 + 28 + 27.5 - 273 = 1224.5 cfs (791.39 mgd)
High Flow 30Q10 = 1710 + 76 + 38 + 37.74 - 273 = 1588.34 cfs (1026.54 mgd)
Harmonic Mean = 2350 + 80 + -- + -- - 275 = 2155 cfs (1392.78 mgd)


The high flow months are December through May. If there are any questions concerning this analysis, please let me know.

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Dominion Power – Bear Garden Power Station #VA0090891
Outfall 002

TO: Kirk Batsel

FROM: Amanda Gray 

DATE: July 9, 2008

COPIES: File

The Bear Garden Power Station is proposing to discharge to an unnamed tributary to the James River near New Canton, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

The VDEQ conducted flow measurements on North Creek from 1990 to 2001. The measurements were correlated with the same-day daily mean values from the continuous record gage on Fine Creek at Fine Creek Mills, VA (#02036500). The measurements correlated very well with the same day daily mean values from the continuous record gage on Fine Creek. The measurements and the daily mean values were plotted on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies for the measurement site were then calculated using the equation of the line and the flow frequencies for the entire period of record of the Fine Creek gage.

The flow frequencies at the discharge point were determined by using the values at the measurement site and adjusting them by proportional drainage areas. The flow frequencies for the measurement site and the discharge point are listed below. This analysis does not take into consideration any other withdrawals, discharges, or springs.

Fine Creek at Fine Creek Mills, VA (#02036500):

Drainage Area = 22.1 mi²

1Q10 = 0.24 cfs	High Flow 1Q10 = 2.5 cfs
7Q10 = 0.3 cfs	High Flow 7Q10 = 3.1 cfs
30Q5 = 0.98 cfs	High Flow 30Q10 = 5.8 cfs
30Q10 = 0.53 cfs	Harmonic Mean = 3.7 cfs

North Creek at Fork Union, VA (#02030760):

Drainage Area = 2.0 mi²

1Q10 = 0.05 cfs	High Flow 1Q10 = 0.238 cfs
7Q10 = 0.058 cfs	High Flow 7Q10 = 0.274 cfs
30Q5 = 0.128 cfs	High Flow 30Q10 = 0.415 cfs
30Q10 = 0.53 cfs	Harmonic Mean = 0.308 cfs

James River, UT at Perennial Point downstream of Outfall 002 :

Drainage Area = 1.53 mi²

1Q10 = 0.038 cfs (0.025 MGD)	High Flow 1Q10 = 0.182 cfs (0.118 MGD)
7Q10 = 0.044 cfs (0.028 MGD)	High Flow 7Q10 = 0.21 cfs (0.136 MGD)
30Q5 = 0.098 cfs (0.063 MGD)	High Flow 30Q10 = 0.317 cfs (0.205 MGD)
30Q10 = 0.41 cfs (0.265 MGD)	Harmonic Mean = 0.236 cfs (0.153 MGD)

The high flow months are December through May. If there are any questions concerning this analysis, please let me know.

**Planning Statement for VPDES Permit Application Processing
DEO-SCRO**

VPDES	OwnerName	Facility	County
VA0090891	Dominion Power	Bear Garden Power Station	Buckingham

Outfall #: 002

River Basin: James River (Middle)

Receiving Stream: James River, UT

Subbasin: James River

Watershed Code: H20R

River Mile: 0.64

	MGD		MGD
1Q10	0.025	HF 1Q10	0.118
7Q10	0.028	HF7Q10	0.136
30Q5	0.063	HF30Q10	0.205
30Q10	0.265	HM	0.153

Modeling Notes

WQMP Name 9 VAC 25-720-60

Statement There are no allocations included in the plan for this facility.

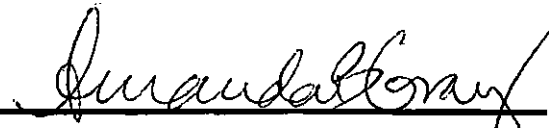
TMDL ID None

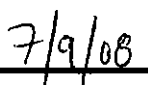
Impairment Cause None

TMDL Due Date

Completed TMDL Information

TMDL Approval Dates


Amanda B. Gray, Water Planning Engineer


Date

METALS DATA FROM JAMES RIVER SAMPLE COLLECTED BY DEQ	
PARAMETER	CONCENTRATION (ug/l)
Mercury, Dissolved	<0.2
Selenium, Dissolved	<0.5
Aluminum, Dissolved	10.2
Antimony, Dissolved	<0.12
Zinc, Dissolved	2.19
Silver, Dissolved	<0.1
Nickel, Dissolved	0.48
Thallium, Dissolved	<0.2
Manganese, Dissolved	8.86
Lead, Dissolved	<0.1
Iron , Dissolved	<100
Copper, Dissolved	0.5
Chromium, Dissolved	<0.1
Cadmium, Dissolved	<0.1
Arsenic, Dissolved	0.26
Magnesium, Dissolved (mg/l)	4.6
Calcium, Dissolved (mg/l)	17

James River Ambient Data - Station 2-JMS176.63

Date	Hardness	Temperature	pH
03/24/1970 16:00	NULL	8.89	6.8
04/22/1970 17:15	NULL	17.78	7.5
05/06/1970 11:35	NULL	16.11	7.2
06/29/1970 12:05	NULL	23.89	8
07/09/1970 16:20	NULL	23.89	6.8
08/20/1970 12:50	NULL	28.89	8.5
09/21/1970 13:45	NULL	25.56	8.5
10/28/1970 11:10	NULL	14.44	7.3
11/23/1970 12:40	NULL	6.11	7.2
12/15/1970 12:20	NULL	5.56	7.2
01/18/1971 15:45	NULL	2.22	7
02/14/1971 13:30	NULL	4.44	7
03/15/1971 13:50	NULL	11.11	6.8
04/28/1971 13:45	NULL	15.56	7.4
05/13/1971 17:30	NULL	20	7.5
06/27/1971 09:00	NULL	25	8
07/08/1971 14:30	NULL	28.89	8.7
08/02/1971 10:15	NULL	25.56	8.5
09/23/1971 13:40	NULL	22.22	7.8
10/05/1971 16:10	NULL	23.33	7.5
11/29/1971 18:00	NULL	6.67	7
12/20/1971 14:00	NULL	7.78	7.2
01/20/1972 13:50	NULL	5	7.2
02/10/1972 12:40	NULL	2.78	6.8
03/20/1972 13:30	NULL	13.33	7.4
04/04/1972 13:10	NULL	12.22	7.3
04/30/1972 13:25	NULL	19.44	7.4
07/19/1972 14:45	NULL	27.78	7.6
08/17/1972 13:15	NULL	22.22	7
09/26/1972 15:00	NULL	23.89	8
10/31/1972 17:10	NULL	11.67	7.3
11/27/1972 13:15	NULL	6.11	7
12/20/1972 14:55	NULL	6.11	7.6
01/24/1973 11:40	NULL	5	6.8
02/16/1973 12:15	NULL	4.44	7
03/06/1973 12:00	NULL	10	6.8
04/05/1973 10:50	NULL	12.22	7
05/20/1973 15:00	NULL	18.33	8
06/06/1973 12:15	NULL	24.44	7.6
07/17/1973 17:15	NULL	25.56	7.6
08/03/1973 15:10	NULL	25.56	8
09/16/1973 14:00	NULL	25.56	7.2
10/26/1973 14:45	NULL	16.11	7.8
10/31/1973 14:10	NULL	13.33	7.5
12/05/1973 14:30	NULL	11.11	7.5
01/16/1974 14:15	NULL	7.22	7.2

Average Hardness = 61.303

90th% Annual Temp= 26.65

90th % pH = 8.235

10th % pH = 7

James River Ambient Data - Station 2-JMS176.63

Date	Hardness	Temperature	pH
02/22/1974 16:45	NULL	9.44	7.5
03/19/1974 13:55	NULL	10	7.5
04/03/1974 13:40	NULL	17.22	7.6
05/07/1974 14:55	NULL	16.67	9
06/27/1974 14:45	NULL	25	8.5
07/24/1974 13:00	NULL	NULL	8.4
08/15/1974 10:30	NULL	26.67	NULL
09/12/1974 14:00	NULL	21.11	7
10/07/1974 12:00	NULL	15	7.5
10/07/1974 13:45	NULL	15	7.5
11/13/1974 13:00	NULL	10	7.03
01/28/1975 11:00	NULL	6.67	7.5
02/12/1975 11:30	NULL	2.22	7
03/25/1975 11:40	NULL	11.11	7.3
04/08/1975 13:30	NULL	15.56	7.5
05/13/1975 11:10	NULL	20	7.6
06/23/1975 12:05	NULL	23.33	9
07/07/1975 11:30	NULL	25	7.5
08/29/1975 12:00	NULL	27.22	8.7
09/10/1975 14:20	NULL	24.44	8.2
10/03/1975 12:00	NULL	15.56	7.5
11/05/1975 10:15	NULL	13.33	7.5
12/09/1975 15:20	NULL	6.11	7.4
01/22/1976 11:55	NULL	1.11	7.7
02/02/1976 11:30	NULL	3.33	7
03/08/1976 12:20	NULL	12.22	7.8
04/08/1976 11:30	NULL	15.56	7.5
06/28/1976 14:00	NULL	26.11	7
07/21/1976 15:30	NULL	30	8.8
08/03/1976 12:00	NULL	22.78	8
11/29/1976 13:20	NULL	10	7
12/20/1976 11:45	NULL	5	7.2
01/24/1977 14:05	NULL	1	7
03/22/1977 12:35	NULL	11	7.2
06/21/1977 11:40	NULL	NULL	8
07/28/1977 11:20	NULL	24	8.7
09/29/1977 11:30	NULL	20.59	8
10/13/1977 11:20	NULL	1.4	7.7
12/22/1977 13:30	NULL	0.7	7.5
02/01/1978 13:45	NULL	3	7.2
02/01/1978 13:50	NULL	3	7.2
04/11/1978 10:50	NULL	16	7.7
05/03/1978 11:30	NULL	14	8
06/14/1978 12:40	NULL	23	8.2
07/18/1978 11:50	NULL	27	7.8
08/23/1978 11:50	NULL	26	8
09/26/1978 10:40	NULL	20	7.5
10/25/1978 14:30	NULL	15	9

James River Ambient Data - Station 2-JMS176.63

Date	Hardness	Temperature	pH
12/05/1978 11:30	NULL	16	7
02/06/1979 13:55	NULL	3	7
01/16/1990 12:30	NULL	6.78	7.38
07/18/1990 11:30	80.000	25.5	7.15
10/24/1990 11:45	45.000	15.45	7.72
01/16/1991 12:30	70.000	6.8	7.38
04/11/1991 12:01	66.000	17.24	7.19
10/29/1991 11:28	102.000	14.83	7.64
01/13/1992 11:51	44.000	6.29	7.1
04/27/1992 11:25	62.000	14.03	6.74
07/14/1992 11:16	81.000	28.36	8.1
10/27/1992 11:25	80.000	11.93	7.45
01/12/1993 09:45	44.000	6.41	7.23
04/28/1993 10:00	52.000	14.43	7.13
07/20/1993 12:40	60.000	27.58	7.38
10/13/1993 10:10	80.000	12.9	7.74
01/31/1994 10:41	38.000	4.51	6.87
04/27/1994 11:00	54.000	20.65	7.32
07/20/1994 13:00	68.000	28.5	7.63
08/24/1994 14:00	49.000	23.2	7.62
09/21/1994 12:34	84.000	20.59	7.97
10/24/1994 12:00	74.000	14.74	7.73
11/14/1994 11:10	62.000	8.81	7.62
12/12/1994 11:00	74.000	5.97	7.69
02/28/1995 13:41	53.000	7.63	7.52
03/15/1995 08:22	76.000	9.5	7.43
04/19/1995 10:50	64.000	15.19	7.6
05/15/1995 14:41	49.000	20.91	7.45
06/21/1995 14:45	50.000	25.68	7.74
07/20/1995 12:00	66.000	27.49	7.64
08/17/1995 12:55	93.000	30.08	8.33
09/18/1995 13:00	82.000	21.07	7.82
10/18/1995 10:30	78.000	12.85	7.54
11/15/1995 12:45	46.000	6.91	7.29
12/14/1995 13:00	44.000	2.38	7.19
01/16/1996 10:22	38.000	0	6.93
02/13/1996 13:15	46.000	4.56	7.19
03/13/1996 09:11	56.000	4.31	7.64
04/02/1996 10:45	41.000	10.06	7.08
05/09/1996 12:45	62.000	18.86	7.72
06/10/1996 08:45	56.000	23.31	7.62
07/10/1996 08:45	68.000	26.55	7.57
08/12/1996 11:20	70.000	23.89	7.57
09/10/1996 09:00	50.000	21.76	6.99
10/07/1996 09:00	75.000	13.57	7.81
11/07/1996 09:41	59.000	12.01	7.39
12/04/1996 09:40	37.000	7.52	7.06
01/08/1997 11:00	59.000	6	7.66

James River Ambient Data - Station 2-JMS176.63

Date	Hardness	Temperature	pH
02/04/1997 13:33	51.800	5.83	7.36
03/25/1997 07:45	48.400	9.79	7.34
04/16/1997 07:45	58.600	13	7.57
05/20/1997 08:40	60.200	21.17	7.63
06/24/1997 07:45	63.400	26.09	7.37
08/06/1997 11:46	38.600	22.97	7.63
09/15/1997 12:00	52.700	22.34	7.77
10/21/1997 11:33	50.100	12.03	7.74
11/17/1997 11:11	47.100	5.18	7.59
12/17/1997 12:10	61.900	1.78	7.43
02/26/1998 11:50	58.800	7.96	7.49
03/10/1998 08:30	36.800	9.98	7.24
04/08/1998 11:40	47.700	13.12	7.57
05/07/1998 12:15	48.000	17.64	7.71
06/03/1998 07:25	34.600	24.02	7.66
07/01/1998 11:35	50.200	26.86	5.93
08/06/1998 08:10	72.200	24.7	7.89
09/03/1998 08:35	77.900	25.32	8.34
10/08/1998 09:20	83.100	18.47	7.79
11/09/1998 11:15	82.000	7.38	7.65
12/16/1998 10:11	75.000	5.14	7.42
01/13/1999 12:44	74.000	2.61	7.58
02/04/1999 10:45	54.000	6.52	6.69
03/04/1999 12:45	26.000	7.25	7.26
04/13/1999 11:55	60.000	13.68	7.4
05/27/1999 14:15	48.000	21.72	7.97
06/23/1999 14:15	71.100	23.53	8.49
07/29/1999 12:30	94.300	28.34	8.57
08/26/1999 12:40	76.200	25.1	8.54
09/23/1999 12:50	50.000	16.87	7.88
10/04/1999 13:15	43.600	18.07	7.23
11/23/1999 10:00	46.700	11.66	7.25
12/20/1999 14:00	47.600	6.54	7.36
01/06/2000 13:50	45.800	6.32	7.25
02/14/2000 13:45	58.500	4.95	7.05
03/13/2000 14:00	51.000	12.21	7.44
04/10/2000 13:45	51.000	13.89	7.73
06/07/2000 14:00	53.000	21.05	7.65
07/12/2000 12:50	64.000	27.14	8
08/09/2000 13:30	61.800	29.93	8.03
09/14/2000 12:10	55.400	24.75	7.29
10/12/2000 13:45	79.100	13.52	7.86
11/08/2000 10:40	90.200	11.69	7.85
12/06/2000 10:15	84.500	1.1	7.83
01/08/2001 12:35	68.700	0.54	7.15
02/05/2001 12:20	70.900	4.21	7.92
03/22/2001 12:00	24.200	11.62	6.75
04/11/2001 12:20	53.300	17.21	7.38

James River Ambient Data - Station 2-JMS176.63

Date	Hardness	Temperature	pH
08/21/2001 10:30	84.200	26.07	8.38
12/12/2001 09:15	45.100	7.97	7.42
02/21/2002 09:30	NULL	8.31	7.98
04/02/2002 10:00	21.300	13.05	7.33
06/25/2002 14:55	103.000	31.3	8.51
08/20/2002 12:50	119.000	29.63	9.14
10/21/2002 10:00	89.900	14.93	7.94
12/18/2002 10:15	42.100	4.76	7.12
03/06/2003 09:10	45.300	8.9	6.91
04/28/2003 14:15	58.500	17.93	7.73
06/17/2003 11:30	54.600	19.52	7.4
08/20/2003 11:44	NULL	25.02	7.81
10/29/2003 10:30	NULL	12.4	7.5
12/03/2003 11:40	NULL	5.31	7.68
02/10/2004 13:55	NULL	4.07	7.4
04/12/2004 12:00	NULL	11.01	6.88
06/23/2004 11:30	NULL	24.92	7.84
08/24/2004 11:10	NULL	24.57	8.25
10/05/2004 13:00	NULL	18.56	7.5
12/13/2004 11:35	NULL	8.44	7.37
01/12/2005 11:10	NULL	8.5	7.43
02/17/2005 11:10	NULL	6.82	7.46
05/03/2005 10:50	NULL	14.1	7.99
06/30/2005 11:05	NULL	26.96	8.14
07/11/2005 11:20	NULL	26.71	7.01
09/13/2005 11:30	NULL	23.45	8.53
12/20/2005 11:45	NULL	2.66	7.63
01/19/2006 11:10	NULL	5.44	7.47
03/20/2006 12:15	NULL	11.2	8.3
06/12/2006 12:20	NULL	21.5	7.6
06/21/2006 10:50	NULL	27.6	8.2
07/25/2006 10:50	NULL	27.2	7.5
09/13/2006 10:40	NULL	21.2	7.6
11/30/2006 11:33	NULL	12.4	7.1
01/30/2007 13:02	70.000	2.1	7
03/01/2007 11:03	58.000	6.5	7
05/03/2007 12:07	62.000	20.2	7.7
07/31/2007 13:16	66.000	26.7	8.1
09/11/2007 13:00	106.000	27.6	8.2
10/01/2007 15:00	NULL	21.1	8.3
10/22/2007 14:45	NULL	18.8	8.1
11/07/2007 13:03	68.000	9	7.3
01/03/2008 11:38	NULL	1.7	7.9
03/04/2008 13:40	NULL	11	7.9
05/20/2008 11:42	NULL	17.1	7.7

James River Wet Season Data

Date
03/24/1970 16:00
04/22/1970 17:15
05/06/1970 11:35
12/15/1970 12:20
01/18/1971 15:45
02/14/1971 13:30
03/15/1971 13:50
04/28/1971 13:45
05/13/1971 17:30
12/20/1971 14:00
01/20/1972 13:50
02/10/1972 12:40
03/20/1972 13:30
04/04/1972 13:10
04/30/1972 13:25
12/20/1972 14:55
01/24/1973 11:40
02/16/1973 12:15
03/06/1973 12:00
04/05/1973 10:50
05/20/1973 15:00
12/05/1973 14:30
01/16/1974 14:15
02/22/1974 16:45
03/19/1974 13:55
04/03/1974 13:40
05/07/1974 14:55
01/28/1975 11:00
02/12/1975 11:30
03/25/1975 11:40
04/08/1975 13:30
05/13/1975 11:10
12/09/1975 15:20
01/22/1976 11:55
02/02/1976 11:30
03/08/1976 12:20
04/08/1976 11:30
12/20/1976 11:45
01/24/1977 14:05
03/22/1977 12:35
12/22/1977 13:30
02/01/1978 13:45
02/01/1978 13:50
04/11/1978 10:50
05/03/1978 11:30
12/05/1978 11:30
02/06/1979 13:55

Temp	pH
8.89	6.8
17.78	7.5
16.11	7.2
5.56	7.2
2.22	7
4.44	7
11.11	6.8
15.56	7.4
20	7.5
7.78	7.2
5	7.2
2.78	6.8
13.33	7.4
12.22	7.3
19.44	7.4
6.11	7.6
5	6.8
4.44	7
10	6.8
12.22	7
18.33	8
11.11	7.5
7.22	7.2
9.44	7.5
10	7.5
17.22	7.6
16.67	9
6.67	7.5
2.22	7
11.11	7.3
15.56	7.5
20	7.6
6.11	7.4
1.11	7.7
3.33	7
12.22	7.8
15.56	7.5
5	7.2
1	7
11	7.2
0.7	7.5
3	7.2
3	7.2
16	7.7
14	8
16	7
3	7

Date
01/16/1990 12:30
01/16/1991 12:30
04/11/1991 12:01
01/13/1992 11:51
04/27/1992 11:25
01/12/1993 09:45
04/28/1993 10:00
01/31/1994 10:41
04/27/1994 11:00
12/12/1994 11:00
02/28/1995 13:41
03/15/1995 08:22
04/19/1995 10:50
05/15/1995 14:41
12/14/1995 13:00
01/16/1996 10:22
02/13/1996 13:15
03/13/1996 09:11
04/02/1996 10:45
05/09/1996 12:45
12/04/1996 09:40
01/08/1997 11:00
02/04/1997 13:33
03/25/1997 07:45
04/16/1997 07:45
05/20/1997 08:40
12/17/1997 12:10
02/26/1998 11:50
03/10/1998 08:30
04/08/1998 11:40
05/07/1998 12:15
12/16/1998 10:11
01/13/1999 12:44
02/04/1999 10:45
03/04/1999 12:45
04/13/1999 11:55
05/27/1999 14:15
12/20/1999 14:00
01/06/2000 13:50
02/14/2000 13:45
03/13/2000 14:00
04/10/2000 13:45
12/06/2000 10:15
01/08/2001 12:35
02/05/2001 12:20
03/22/2001 12:00
04/11/2001 12:20

Temp	pH
6.78	7.38
6.8	7.38
17.24	7.19
6.29	7.1
14.03	6.74
6.41	7.23
14.43	7.13
4.51	6.87
20.65	7.32
5.97	7.69
7.63	7.52
9.5	7.43
15.19	7.6
20.91	7.45
2.38	7.19
0	6.93
4.56	7.19
4.31	7.64
10.06	7.08
18.86	7.72
7.52	7.06
6	7.66
5.83	7.36
9.79	7.34
13	7.57
21.17	7.63
1.78	7.43
7.96	7.49
9.98	7.24
13.12	7.57
17.64	7.71
5.14	7.42
2.61	7.58
6.52	6.69
7.25	7.26
13.68	7.4
21.72	7.97
6.54	7.36
6.32	7.25
4.95	7.05
12.21	7.44
13.89	7.73
1.1	7.83
0.54	7.15
4.21	7.92
11.62	6.75
17.21	7.38

James River Wet Season Data

Page 2 of 2

Date	Temp	pH
12/12/2001 09:15	7.97	7.42
02/21/2002 09:30	8.31	7.98
04/02/2002 10:00	13.05	7.33
12/18/2002 10:15	4.76	7.12
03/06/2003 09:10	8.9	6.91
04/28/2003 14:15	17.93	7.73
12/03/2003 11:40	5.31	7.68
02/10/2004 13:55	4.07	7.4
04/12/2004 12:00	11.01	6.88
12/13/2004 11:35	8.44	7.37
01/12/2005 11:10	8.5	7.43
02/17/2005 11:10	6.82	7.46
05/03/2005 10:50	14.1	7.99
12/20/2005 11:45	2.66	7.63
01/19/2006 11:10	5.44	7.47
03/20/2006 12:15	11.2	8.3
01/30/2007 13:02	2.1	7
03/01/2007 11:03	6.5	7
05/03/2007 12:07	20.2	7.7
01/03/2008 11:38	1.7	7.9
03/04/2008 13:40	11	7.9
05/20/2008 11:42	17.1	7.7

90th% Wet Season Temp= 17.71

ATTACHMENT 11

303(d) LISTED SEGMENTS

2006 DEQ-SCRO Water Quality Assessment Impaired Waters Factsheets

James River

IR CATEGORY: 5A

WATERBODY SIZE: 69.15 Miles

James River mainstem from Holcomb Rock Dam downstream to the Rivanna River.

ASSOCIATED ADB ASSESSMENT UNITS:

VAC-H03R_JMS01A00	VAC-H05R_JMS03A00	VAC-H20R_JMS01A02
VAC-H03R_JMS04A02	VAC-H05R_JMS02A00	VAC-H20R_JMS02A02
VAC-H03R_JMS06A02	VAC-H05R_JMS01A00	VAC-H20R_JMS03A02
VAC-H05R_JMS04A00	VAC-H08R_JMS01A00	

IMPAIRED AREA ID: VAC-H03R-04

TMDL PROJECT ID: 00546

This segment does not support the **Fish Consumption** use.

This segment is impaired for **PCBs**

SOURCES: Source Unknown

TMDL DUE DATE: 2016

1999 CONSENT DECREE?: N

Station IDs:

2-JMS258.54 (Ambient & 2001 FT/Sed)

PCBs 4 Species

2-JMS267.47 (2001 FT/Sed)

VDH Fish Advisory Information - Effective 12/13/04: James River mainstem from Big Island dam downstream to the I-95 Bridge in Richmond to include a portion of the Hardware and State Rivers. The advisory recommends that no more than two meals/month of the following species be consumed.

Gizzard Shad

Carp

American Eel

Flathead Catfish

Quillback Carpsucker

Visit the VDH website for more details: <http://www.vdh.state.va.us/HHControl/fishingadvisories.asp>

ATTACHMENT 12

TABLE A AND TABLE B - CHANGE SHEETS

TABLE A

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes FROM PREVIOUS PERMIT and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER	MONITORING CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
001	BOD ₅	1/6 Months to None		Based on the VPDES application submitted by Dominion May 16, 2008, changes to the proposed plant have significantly reduced the anticipated concentration of BOD ₅ . Based on this new information, this parameter is not considered to present a receiving stream water quality concern from this proposed discharge.	10/17/08 KAB
002	TSS	None to 1/Year		TSS was added with this reissuance as this parameter is a good indicator of BMP effectiveness. The monitoring frequency is once per year and the sample type is grab. This monitoring frequency and sample type should be adequate for assessment of potential storm water impacts and the effectiveness of the facility's SWPPP.	KAB 9/15/08
002		Standard Part I.A. SW language changed to language for greater detention capacity		Based on email response of 9/3/08, 100 yr design capacity.	KAB 9/15/08

OUTFALL NUMBER	PARAMETER	MONITORING CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
103	All			This internal outfall was added with this reissuance based on the submitted application and plant design. Since this is a cooling (chiller) tower blowdown, the same parameters as 102 apply.	KAB 8/11/08

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
Outfall 003	This outfall was deleted based on the reconfigured design of the proposed facility by the new owner, Dominion.	KAB 9/15/08
None	Added permit reopeners for 1) Water Quality Criteria, 2) Chesapeake Bay Nutrients, and 3) Total Maximum Daily Load. Added Licensed Wastewater Operator condition (operator not required at this time).	KAB 8/11/08
PCB Discharge	Changed condition title to PCB Discharge Prohibition. Also reworded to be consistent with the Federal Effluent Guideline (FEG) 40 CFR §423.15 for the Steam Electric Power Generating Point Source Category. The intent is that no PCBs are discharged from this new source.	KAB 8/11/08
Material Handling/Storage	Removed as the SWPPP should address this.	KAB 8/11/08
ALL	Updated narrative language per agency guidance.	KAB 8/11/08

TABLE B

VPDES PERMIT PROGRAM
Permit Processing Change Sheet

1. Effluent Limits and Monitoring Schedule: (List any changes MADE DURING PERMIT PROCESS and give a brief rationale for the changes).

OUTFALL NUMBER	PARAMETER CHANGED	MONITORING LIMITS CHANGED FROM / TO	EFFLUENT LIMITS CHANGED FROM / TO	RATIONALE	DATE & INITIAL
103	All	FEG limits / None	FEG limits / None	Based on the latest design changes at the proposed station, this internal outfall has been eliminated by combining the flow into internal outfall 102	KAB 7/30/09
001	Acute Toxicity Criteria	LC ₅₀ of 14% to LC ₅₀ of 12%		Based on the latest design changes at the proposed station which resulted in a change in proposed effluent flow.	KAB 7/30/09
002	TPH	None to 1/Yr		Based on facility operations, including the bulk transfer and storage of petroleum as a fuel source in this drainage area, minimal monitoring of once per year has been added with this reissuance. This monitoring requirement is consistent with other VPDES permits where TPH is anticipated to be present and should be adequate for assessment of potential storm water impacts and the effectiveness of the facility's SWPPP.	KAB 10/1/09

OTHER CHANGES FROM:	CHANGED TO:	DATE & INITIAL
Mixing Zone Requirements/Monitoring as Drafted	Changed frequency of instream monitoring to semiannual and added the requirement to develop a predictive model to determine instream temperature at the edge of the approved mixing zone. The increased frequency is anticipated to generate the required information necessary to develop and refine a predictive model. By developing this model, Dominion will also be addressing VDGIF comments concerning benthic species.	KAB 7/30/09
Monitoring rational	Reassessed and updated monitoring rational based on plant changes proposed by Dominion.	KAB 7/30/09
Stormwater Management Conditions	Updated to most current version	8/31/09 KAB

ATTACHMENT 13

NPDES INDUSTRIAL PERMIT RATING WORKSHEET

NPDES Permit Rating Work Sheet

NPDES NO: V A 0 0 9 0 8 9 1

Facility Name:

D O M I N I O N I B E A R G A R D E N G E N E R A T I N G
S T A T I O N

City: N E W I C A N T I O N

Receiving Water: J A M E S R I V E R

Reach Number:

- ☒ Regular Addition
☐ Discretionary Addition
☐ Score change, but no status change
☐ Deletion

Is this facility a steam electric power plant (SIC=4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)
2. A nuclear power plant
3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

- ☐ YES; score is 700 (stop here)
☐ NO (continue)

☒ YES: score is 600 (stop here) ☐ NO (continue)

FACTOR 1: Toxic Pollutant Potential

PCS SIC Code: Primary SIC Code: 4 9 1 1

Other SIC Codes:

Industrial Subcategory Code: (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input type="checkbox"/> 7.	7	35
<input type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked:

Total Points Factor 1:

FACTOR 2: Flow/Stream Flow Volume (Complete Either Section A or Section B; check only one)

Section A--Wastewater Flow Only Considered

Wastewater Type (See Instructions)	Code	Points
Type I: Flow < 5 MGD	<u> </u> 11	0
Flow 5 to 10 MGD	<u> </u> 12	10
Flow > 10 to 50 MGD	<u> </u> 13	20
Flow > 50 MGD	<u> </u> 14	30
Type II: Flow < 1 MGD	<u> </u> 21	10
Flow 1 to 5 MGD	<u> </u> 22	20
Flow > 5 to 10 MGD	<u> </u> 23	30
Flow > 10 MGD	<u> </u> 24	50
Type III: Flow < 1 MGD	<u> </u> 31	0
Flow 1 to 5 MGD	<u> </u> 32	10
Flow > 5 to 10 MGD	<u> </u> 33	20
Flow > 10 MGD	<u> </u> 34	30

Section B--Wastewater and Stream Flow Considered

Wastewater Type (See Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/II:	< 10%	<u> </u> 41	0
	> 10% to < 50%	<u> </u> 42	10
	> 50%	<u> </u> 43	20
Type II:	< 10%	<u> </u> 51	0
	> 10% to < 50%	<u> </u> 52	20
	> 50%	<u> </u> 53	30

Code Checked from Section A or B:

Total Points Factor 2:

NPDES Permit Rating Work Sheet

NPDES No: V | A | 0 | 0 | 9 | 0 | 8 | 9 | 1

SCORE SUMMARY

Factor	Description	Total Points
1	Toxic Pollutant Potential	_____
2	Flow/Stream flow Volume	_____
3	Conventional Pollutants	_____
4	Public Health Impacts	_____
5	Water Quality Factors	_____
6	Proximity to Near Coastal Waters	_____
TOTAL (Factors 1-6)		_____

S1. Is the total score equal to or greater than 80? ☐ Yes (Facility is a major) ☐ No

S2. If the answer to the above question is no, would you like this facility to be discretionary major?

☐ No

☐ Yes (add 500 points to the above score and provide reason below:

Reason:

NEW SCORE: 600

OLD SCORE: 70

Kirk A. Batsel

Permit Reviewer's Name

(434) 582 - 6204

Phone Number

September 15, 2008

Date

ATTACHMENT 14

EPA/VIRGINIA DRAFT PERMIT SUBMISSION CHECKLIST

Part I. Virginia Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Dominion Bear Garden Generating Station
NPDES Permit Number:	VA0090891
Permit Writer Name:	Kirk A. Batsel
Date:	August 11, 2008

Major ☒ Minor ☐ Industrial ☒ Municipal ☐

I.A. Draft Permit Package Submittal Includes:	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?		X	
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?		X	
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?		X	
9. Permit Rating Sheet for new or modified industrial facilities?	X		

I.B. Permit/Facility Characteristics	Yes	No	N/A
Is this a new, or currently unpermitted facility? (Reissuance for a proposed facility)		X	
1. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
2. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
3. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?			X

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
4. Has there been any change in streamflow characteristics since the last permit was developed?	X		
5. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
6. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
7. Does the facility discharge to a 303(d) listed water?	X		
8.a. Has a TMDL been developed and approved by EPA for the impaired water?		X	
8.b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?		X	
8.c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?		X	
9. Have any limits been removed, or are any limits less stringent, than those in the current permit? (CI')	X		
10. Does the permit authorize discharges of storm water?	X		
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Does the permit include appropriate Pretreatment Program requirements?			X
18. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?	X		
19. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
20. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
21. Has previous permit, application, and fact sheet been examined?	X		

Part II NPDES Draft Permit Checklist
Region III NPDES Permit Quality Review Checklist – For Non-Municipals
 (To be completed and included in the record for all non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?	X		
1.a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?	X		
1.b. If no, does the record indicate that a technology-based analysis based on best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			X
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?	X		
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?	X		
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production: for the facility (not design)?			X
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
5.a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?	X		
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average and/or monthly average limits?	X		
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		X	

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
Does the fact sheet provide effluent characteristics for each outfall? (predicted)	X		
3. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
4.a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
4.b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
4.c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
4.d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (e.g., do calculations include ambient/background concentrations where data are available)?	X		
4.e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
4. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
5. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?	X		
6. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass concentration)?	X		
7. Does the fact sheet indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

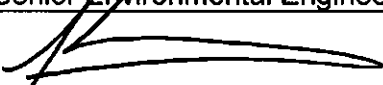
II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
1.a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate his waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?	X		

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?	X		
1.a. If yes, does the permit adequately incorporate and require compliance with the BMPs?	X		
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41 <ul style="list-style-type: none"> • Duty to comply • Duty to reapply • Need to halt or reduce activity not a defense • Duty to mitigate • Proper O & M • Permit Actions • Property rights • Duty to provide information • Inspections and entry • Monitoring and reporting • Signatory requirement • Reporting requirements <ul style="list-style-type: none"> Planned change Anticipated non-compliance Transfers Monitoring Reports Compliance schedules 24-hour reporting Other non-compliance • Bypass • Upset 			
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Kirk A. Batsel
Title	Senior Environmental Engineer
Signature	
Date	August 11, 2008

ATTACHMENT 15

CHRONOLOGY SHEET

Chronology

Friday, October 02, 2009

Facility Name: Dominion Bear Garden Generating Station

VA0090891

<i>Date</i>	<i>Event</i>	<i>Comment</i>
	— FS/SOB draft permit sent to EPA/OWPS:	originally sent to M. Smith (EPA) via email 10/20/08
	— Owner concurrence of draft permit:	original owner concurrence 11/3/09
11/20/2007	— First Application Reminder Phone Call:	spoke w/ Chris Jacobsen, who indicated to send reminder electronically to Mr. Greg Kunkel (New Owner Contact)
11/20/2007	— Reissuance letter mailed:	sent via email
2/26/2008	— Miscellaneous:	ken Roller leaves voice mail concerning reissuance application for station as Dominion is purchasing. KAB forwards reissuance reminder email with attachments.
2/29/2008	— Second Application Reminder Phone Call:	Spoke w/ Ken Roller, VA power, would will be appl contact with new owner concerning VPDES application renewal.
4/14/2008	— Site visit:	KAB
5/1/2008	— Miscellaneous:	met w/ Ken Roller and performed a courtesy application review to assist w/ completeness. Several points were identified that need to be looked into before formal submission.
5/15/2008	— Application received at RO 1st time:	5/15/08 electronically, hard copy rec'd 5/16/08
5/16/2008	— Reissuance application due:	
6/6/2008	— App sent to State Agencies (list in comment field):	to VDH electronically, J. Capito emails 6/10 that attachment not recieved and to please send via US Mail. Appl package resent via US Mail 6/10.
6/10/2008	— Miscellaneous:	J. Capito (VDH) emails 6/10 that application attachment not recieved and to please send via US Mail. Appl package resent via US Mail 6/10.
6/18/2008	— Miscellaneous:	T&E Coordination form w/ supporting info sent to DGIF electronically. Amy Ewing responds back that DGIF recieved all data packets.
6/20/2008	— Comments rec'd from State Agencies on App:	No Objection, but did comment on proposed Cobb Crk Reservoir intake planned for 6.5-7 miles downstream
7/7/2008	— Miscellaneous:	T&E Coordination meeting held @ DGIF HQ. Dominion is agreeing to perform mussel surveys upfront to establish baseline per DGIF recommendation and guidelines.
7/9/2008	— Site inspection report:	
8/22/2008	— Miscellaneous:	KAB sent 2 questions to R. Hare via email 1st concerning proposed effluent flow meter and 2nd concerning the sizing of outfall 002 SW basin.
9/3/2008	— Miscellaneous:	VA DGIF application comments recieved in SCRO via email
9/3/2008	— Miscellaneous:	K. Lanterman responds back via email - 002 basin designed to handle 100 yr Storm event (question asked 8/22/08)
9/4/2008	— Miscellaneous:	K. Lanterman responds back via email - 001 Flow monitoring instrumentation (question asked 8/22/08)
9/5/2008	— Miscellaneous:	KAB calls DGIF to clarify 9/3/08 comments.
10/13/2008	— Miscellaneous:	K. Lanterman calls and sends email concerning field completion of mussel survey. No state or federally listed species found. Final report to follow.

Facility Name: Dominion Bear Garden Generating Station

VA0090891

<i>Date</i>	<i>Event</i>	<i>Comment</i>
10/14/2008	— Miscellaneous:	Review draft permit comments w/ RPG (verbal only due to layoff circumstances). Draft returned to KAB for revision. KAB notifies Kim Lanterman via voice mail that draft w/ RPG comments returned, and undergoing final revisions.
10/31/2008	— Miscellaneous:	Larry Labrie, Dominion calls KAB and notifies that during review another intermittent waste stream was identified (WTP basin washout) that occurs 1/year. Discussed options and Dominion will follow-up Monday w/ info or extension request.
11/3/2008	— Miscellaneous:	Larry LaBrie called KAB, now engineers have decided to reroute internal waste streams (chiller blowdown to be combined with another stream). This will require submittal of additional (application) info for permit consideration. Dominion requested to send letter on this date asking for suspension of drafting until they can submit a complete package of proposed changes in plant design/operation.
11/3/2008	— Public notice authorization received from owner:	
11/5/2008	— Miscellaneous:	recieve a ltr from Pam Faggert, Dominion, requesting that processing of draft permit be deferred to address design changes to water balance and wastewater discharge system.
11/12/2008	— Old expiration date:	
11/12/2008	— Permit expires:	
11/17/2008	— Miscellaneous:	L. Labrie calls and leaves message indicating that they are working on revised application per Flour engineering changes.
11/18/2008	— Miscellaneous:	K. Lanterman submits final mussel surveys electronically
11/19/2008	— Miscellaneous:	Kim L sends email commenting on final effluent temperture records.
1/14/2009	— Application/Additional Info received at RO 2nd tim:	receipt of revised application
1/14/2009	— Miscellaneous:	Revised application submitted that identifies several changes to the proposed design
1/23/2009	— Miscellaneous:	KAB sends complete appl email based on 1/14/09 submittal.
2/13/2009	— Miscellaneous:	(approximate date) Discussed additional possible changes at plant with Kim L. Asked that any revisions be submitted when they are finalized
3/30/2009	— App returned/Additional info requested 2nd time:	revised site engineering recieved from Dominion (removed O/W separator for SW), based on this, revised flow diagrams are needed to complete application
3/30/2009	— Miscellaneous:	Review changes and call (leave message) Kim indicateing that it looks like changes will require a revised flow diagram.
3/30/2009	— Miscellaneous:	Revised engineering summary submitted to BRRO-L.
3/31/2009	— Miscellaneous:	Kim L sends email with links proposing continous temperature monitoring equipment and method.
3/31/2009	— Miscellaneous:	Kim L submits proposed location diagram for final effluent temperature monitoring.
4/14/2009	— App, additional info received at RO 3rd time:	revised flow diagrams and 4 operational configurations recieved.
4/14/2009	— Application Administratively complete:	Original application admin complete 5/16/09. Revised application complete on 1/14/09. Again revised application complete 4/14/09.
4/14/2009	— Application totally / technically complete:	Originally 6/20/08 w/ receipt of VDH comments. Revised application complete 1/14/09. Rerevised appl complete w/ reciept of flow diagrams 4/14/09.

Date	Event	Comment
4/14/2009	— Miscellaneous:	Dominion (Kim L) submits revised water balances via email.
4/21/2009	— App complete letter sent to permittee:	Original application complete letter sent 5/22/09. Revised application complete email sent 1/29/09. Rerevised appl complete email sent 4/21/09.
4/21/2009	— Miscellaneous:	KAB sends complete application email based on changes contained in Dominion email of 4/14/09.
4/21/2009	— Miscellaneous:	KAB sends email indicating that proposed data sondes and temperature monitoring means/methods appear to be acceptable, also cautioned on the selected probe as it is not field replaceable so back-up would be necessary.
7/30/2009	— Draft permit developed:	completed drafting permit 1st time 8/11/08. Redraft based on all proposed changes 7/30/09.
8/6/2009	— Draft reviewed:	original DP/FS review completed by RPG 8/19/08. 2nd (8/6/09) review completed by Kip Foster.
8/17/2009	— Miscellaneous:	all review (Kip) comments addressed, except new SW language. Kip advises to speak w/ Burt T and determine status of new lang. Called Burt, he is currently revising SW language and will send to me as soon as done (a couple of days). Kip instructs to wait for new language, and insert in DP, before going back to owner.
8/26/2009	— Miscellaneous:	Raw SW language sent to KAB by Burt T.
8/31/2009	— Miscellaneous:	Raw working document of "most current" version of SW management conditions obtained from CO, removed all change edits, reformatted to final version, and incorporated into FS. Preliminary version emailed to Kim L.
9/1/2009	— FS/SOB draft permit sent to owner:	original draft permit sent 10/20/08. 2nd DP sent 9/1/09
9/15/2009	— First time comments received from owner on draft:	Owner originally accepts permit as drafted 11/3/08, however, plant design changes require permit revision and owner requests suspension of process. 9/15/09 Dominion submits fairly extensive comments on draft electronically.
9/30/2009	— Miscellaneous:	Final Site Plan submitted by Dominion
10/2/2009	— FS/SOB draft permit sent to owner 2nd time:	Revised DP and FS to owner